

United States  
Environmental Protection  
Agency

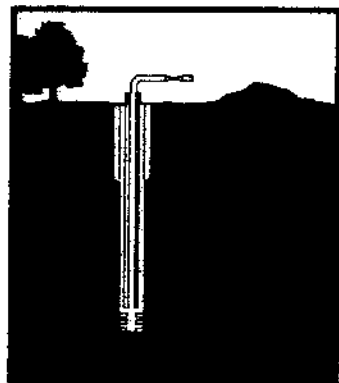
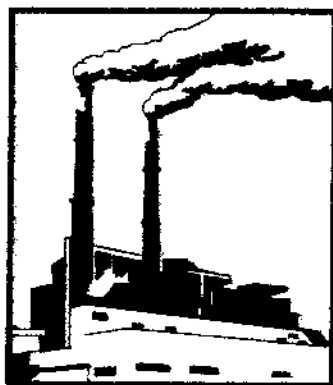
Office of Information  
Analysis and Access  
Washington, DC 20460

February 2001  
EPA 745-B-01-001



# Toxic Chemical Release Inventory Reporting Forms and Instructions

*Revised 2000 Version*



**Section 313**  
**of the Emergency Planning and**  
**Community Right-to-Know Act**  
(Title III of the Superfund Amendments  
and Reauthorization Act of 1986)

# Important Information for Reporting Year 1997

The following information updates or corrects the Forms and Instructions for 1997. No other changes or modifications have been made to the Forms or Instructions other than these listed here.

- ☐ All references to reporting year 1997 and all other date related references have been changed to reflect the current reporting year. (i.e., reporting year 1996 has been changed to reporting year 1997; prior year 1995 was changed to prior year 1996, etc.) This change was made for both the Form R and the instructions.
- ☐ The back side of the pages of the Form R include a box stating "This page intentionally left blank". Please do not copy double-sided.
- ☐ Appendix A contains reporting instructions specific to Federal facilities who are required to report under Executive Order 12856. Further guidance for Federal facilities may be obtained from the EPCRA Hotline at 1-800-535-0202.
- ☐ The States and Regional contact list (Appendices F and G) have been updated.
- ☐ The Alternate Threshold provides eligible facilities with the option of submitting a simplified Form A on substitution of the full Form R report. The Form A has OMB # 2070-0143.
- ☐ The Toxic Chemical List (Table II) has been updated for Reporting Year 1997 to include changes to the list that occurred since last year. EPA has removed two chemicals from the list, 2-bromo-2-nitropropane (bronopol) and 2,6-dimethylphenol. Also, based on a review of the OSHA carcinogen status of the listed chemicals, the *de minimis* levels for three chemicals have been lowered from 1.0 to 0.1 percent. The chemicals with lower *de minimis* levels are: 2,4-dinitrotoluene, 2,6-dinitrotoluene, and nitrobenzene.
- ☐ Use of NAs in Section 8: Not applicable, "NA," can now be used in Section 8.1 through 8.7 to indicate that the waste management activity is not occurring either on-site or off-site.
- ☐ Two new disposal codes have been added to the list of codes applicable for Part II, section 6.2 of the Form R. These codes apply to metals and metal compounds.
- ☐ Appendix H provides a list of Section 313 related materials (e.g., industry-specific guidance documents and information on how to order documents free of charge.)
- ☐ The AFR97 software is now available in three versions: DOS, Windows 3.1 and Windows 95/NT. The DOS version (EPA 745-C-98-001) is included in this package. The Windows 3.1 version (EPA 745-C-98-002) and the Windows 95/NT version (EPA 745-C-98-003) are available upon request by calling (800) 490-9198 or mailing request to: USEPA/NECPI, P.O. Box 42419 Cincinnati, OH 45242-2419, (800) 490-9198. To ensure that your request is filled properly, please use the EPA publication number (shown above) for the version that you are ordering.
- ☐ All versions of the AFR97 software are available for downloading from the Internet ([www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr)). The Web site also contains additional information, such as Frequently Asked Questions, that may be helpful when using AFR.
- ☐ AFR software will also be available on CD-ROM this year. The CD-ROM will contain all three versions of the AFR software (DOS, Windows 3.1 and Windows 95/NT); the complete TRI Reporting Form R and Instructions (this book); and UTIL 97 software that is useful for combining multiple TRI submissions into a dBase file. The CD-ROM will be available by request from NECPI (800 490-9198). Please request EPA 745-C-98-004 when ordering.
- ☐ AFR97 software now generates the 5-page Form R and the 2-page Form A. (The 9-page form is no longer available.)
- ☐ The AFR software contains two new codes for Part II, Section 6.2, Column C:
  - "M41-Solidification /Stabilization - metals and metal compounds only"
  - "M62 -Wastewater Treatment (Excluding POTW) - metals and metal compounds only"

# Toxic Release Inventory Reporting Forms and Instructions

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**AUTOMATED FORM INSTRUCTIONS**

# AFR<sub>97</sub>

**AFR<sub>97</sub>**  
Software to Computerize  
Form R Submissions

## Submit ELECTRONICALLY!



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### AFR Helps You!

-  Gives you (almost) paperless TRI reporting;
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-  Minimizes keystrokes by selecting data from drop-down lists; and
-  Uses error checking/online validation routines.

**Visit THE  
AFR Website!**

For the latest AFR news visit  
our AFR website at:  
[www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr)

**AFR for DOS software is included  
in this package.**

*AFR for Windows is available on request by calling (800) 490-9198.*

**AFR<sub>97</sub>**  
*Software to Computerize  
Form R Submissions*

---

## Automated Form R Software for Reporting Year 1997

The Automated Form R (AFR) for DOS software for reporting year 1997 is designed to make it easier for you to submit TRI data.

Enclosed with this reporting package is a copy of AFR97 for DOS, the software that allows you to submit your TRI data for Reporting Year 1997 (RY97) on a diskette. The AFR97 program incorporates many of your changes and suggestions for improvement.

If you need additional copies of the software, contact the National Center for Environmental Publications and Information (NCEPI) at (800) 490-9198.

AFR for Windows software for 1997 TRI reporting will soon be available from NCEPI (800-490-9198). Look for the most recent information about our software at [www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr) or contact Delores Evans at [evans.delores@epamail.epa.gov](mailto:evans.delores@epamail.epa.gov) or at (202) 260-1625 or Jan Erickson at [erickson.jan@epamail.epa.gov](mailto:erickson.jan@epamail.epa.gov) or at (202) 260-3801.

We welcome your comments and suggestions — please send them to:

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401 M Street, S.W.  
Washington, DC 20460  
e-mail: [petersen.janette@epamail.epa.gov](mailto:petersen.janette@epamail.epa.gov)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
PREVENTION, PESTICIDES AND  
TOXIC SUBSTANCES

Dear AFR User:

I want to thank you each of you who responded to my letter of October 6, 1997, about the AFR Windows software. The tremendous response from you and other users has opened a much needed and appreciated dialogue between EPA and the AFR user community.

We are pleased to tell you that the software has been redesigned in an effort to correct many of the problems that you have reported to us. Beta testing was conducted to confirm this. We have also employed 3rd party testing, to further confirm the quality of the software. In addition, we were able to include many of your suggestions for software enhancements. We hope this adds to the software's stability and usefulness.

Information on the availability of the Windows software is provided in this Form R Instruction book. For additional information about the Windows software, you may contact Delores Evans by e-mail, ([evans.delores@epamail.epa.gov](mailto:evans.delores@epamail.epa.gov)).

So that we can continue the dialogue and get information out to you quickly, we have set up the following channels of communication:

- 1) Shared user e-mail list
- 2) A file of Fax numbers
- 3) A designated space on our web site to provide updated information and to receive your comments. "[www.epa.gov/opptintr/aftr](http://www.epa.gov/opptintr/aftr)"

If you wish to add your name to any of the above lists, please e-mail your information to Delores Evans ([evans.delores@epamail.epa.gov](mailto:evans.delores@epamail.epa.gov)) or send me a letter.

Thank you for your interest in the AFR, I look forward to working with you to continually improve the TRI reporting process.

A handwritten signature in cursive script, reading "Allan S. Abramson".

Allan S. Abramson, Director  
Information Management Division (7407)



## Please Read This Message Before Using AFR97

**AFR97**  
Software to Computerize  
Form R Submissions

In 1987, the EPA developed a software package for reporting Toxic Release Inventory (TRI) submissions, as required under Section 313, Title III of the Superfund Amendments and Reauthorization Act of 1986 and the Pollution Prevention Act of 1990. The software is called Automated Form R or AFR.

Since 1987, the EPA has encouraged submission of TRI data on diskettes because electronic submissions significantly reduce errors. With electronic submissions, your data can also be loaded automatically into EPA's computers.

### Advisory

The enclosed Automated Form R software, although reviewed for quality assurance, should be used with the understanding that all possible variations in the conditions of hardware and software configurations, as well as the data entered, cannot always be anticipated and may consequently have an effect on software use. Moreover, in an ongoing effort to keep pace with the advent of technological advances, development of new software may, on occasion, result in technical errors affecting use. Therefore, we recommend that software users thoroughly review their TRI submissions to ensure accuracy prior to sending them to EPA and the designated State Agency. Any problems, concerns or questions should be referred to Technical Support at (703) 816-4434.

### Statement on Limitations of Warranty and Liability

To the maximum extent permitted by applicable law, the U.S. Environmental Protection Agency makes no warranty, express or implied, and accepts no liability for any damages, consequential or other (including without limitation, direct or indirect damages for personal injury, loss of business profits, business interruption, loss of business information, or any other pecuniary loss), concerning the use, attempted use, or application of the enclosed EPCRA Section 313 Automated Form R software.

We hope you will take this opportunity to submit your TRI reports on disk. If you have any questions, please call:

|                                                        |                 |                                                                            |
|--------------------------------------------------------|-----------------|----------------------------------------------------------------------------|
| <b>Technical Support</b><br>(for AFR software support) | (703) 816-4434* | 8:00 a.m. to 4:30 p.m.<br>Eastern Standard Time except<br>Federal holidays |
|--------------------------------------------------------|-----------------|----------------------------------------------------------------------------|

\* Please note that the EPCRA Hotline cannot respond to questions regarding AFR software use. All calls concerning AFR usage must be made to Technical Support.

## AFR97 for DOS Features

- ▶ AFR97 for DOS can be used in DOS (version 5.0 or higher), Windows™ 3.1, and Windows 95™ \*
- ▶ AFR97 for DOS can be installed on most Local Area Networks (LANs). We recommend that you contact your organization's LAN manager before installing software on the LAN drive.
- ▶ AFR97 for DOS can be used to submit original submissions or revisions for any year beginning with Reporting Year 1991.
- ▶ AFR97 for DOS works with most popular printer models.
- ▶ Qualified submitters can use the two-page Form A.
- ▶ Technical Support is available at (703) 816-4434.

## IMPORTANT NOTE:

- ▶ AFR97 for DOS is limited to 98 unique POTW listings and 98 transfers to off-sites. If you have more than 98 POTWs or more than 98 transfers, you will need to use AFR 97 for Windows. Please contact the Technical Support at (703) 816-4434 for more information.

\* **AFR97 for DOS is included in this package.** AFR97 for **Windows** will soon be available. To request a copy, please call **(800) 490-9198** or download it from our web site at **[www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr)**.



## About AFR for DOS

### AFR System Requirements

The enclosed Automated Form R (AFR) for DOS\* software is supplied on one 3.5-inch, 1.44 MB (high-density) diskette in compressed format. It must be installed before you can enter data. (High-density 5.25-inch diskettes are available from Technical Support.) The hardware and software needed to run AFR are:

- ▶ IBM PC XT or 100% compatible with 512 K of conventional memory;
- ▶ MS-DOS 5.0 or higher;
- ▶ 1.44 MB floppy disk drive for 3.5" diskettes or 1.2 MB drive for 5.25" diskettes;
- ▶ hard disk drive with at least 6.0 megabytes free;
- ▶ color or monochrome monitor; and
- ▶ a variety of printers including HP LaserJet IV/II/IV, Epson dot-matrix, or 100% compatible printers with IBM character set (a list of supported print drivers is available under the AFR Print option).
- ▶ **NOTE:** If you are using the AFR icon version for Windows™, you must have at least 6 MB of free hard disk memory and 4 MB of Random Access Memory (RAM).

AFR for DOS software is designed for use in DOS and Windows environments. AFR for DOS is not a Windows application, but it can be accessed from Windows through AFR icons.

AFR can be installed on a LAN, but can only be accessed by one user at a time.

### System Configuration

The system file CONFIG.SYS requires a minimum of FILES=61 and BUFFERS=30 to run the software, together with a line that increases environment space by 1024 bytes from its current value. The install program will check CONFIG.SYS, and request permission to make changes if necessary. For example, if you currently reserve a default value of 256 bytes for environment space, the install program will change CONFIG.SYS to read:

```
shell=c:\command.com /e:1280 /p
```

### How to Install TRI Automated Form R Software

The TRI Automated Form R software must be installed from the DOS prompt, rather than from the Windows Run command.

- Place the Installation Disk into the appropriate drive and change the default drive letter to that of your diskette drive. (If your diskette drive is A: you would type A: and press ENTER.)
- From the DOS prompt, type INSTALL A: X: (where A: is the disk drive and X: is the drive to which you wish to install AFR\*). Then, press ENTER. Follow the directions displayed on the screen.
- If a change was made to your CONFIG.SYS file, you will be directed to reboot your computer. After you reboot, type C: (or the letter of the drive to which you have installed AFR) then press ENTER.
- Type FORMR then press ENTER to start AFR for DOS.

\* AFR for DOS can be installed on most networks. Please contact your network Administrator before installing this software on your LAN. Show the Administrator this documentation to be sure that AFR97 will be compatible with your LAN configuration.

\* **AFR97 for DOS is included in this package.** AFR97 for **Windows** will soon be available. To request a copy, please call (800) 490-9198 or download it from our web site at [www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr).

## Printing Software Documentation from DOS

Automated Form R software documentation is stored on the diskette labeled "Installation Disk." DOSAFR.TXT is a flat ASCII text file that may be printed from the DOS prompt or any word processor or print utility, such as Windows<sup>TM</sup> Notepad. AFRDOS.WP5 is a WordPerfect 5.1 file containing the AFR for DOS User's Guide with screen illustrations.

To print DOSAFR.TXT from DOS, place the Installation Disk into the appropriate drive and change the default drive letter to that of your diskette drive. (If your diskette drive is A:, you would type A: and press ENTER.) From the DOS prompt type the command TYPE DOSAFR.TXT>PRN and press ENTER. To print AFRDOS.WP5, open it in WordPerfect, and print it directly.

## Printing Software Documentation from Windows

Open Windows. Move the cursor to the selected document icon to print, then double click to open that document. Single click on *File*, then highlight *Print*. Single click to begin printing the selected document.

## Submitting Reports on Diskette

After data entry is complete and the data is validated, the software will copy Form R transfer files to a formatted diskette for submission to EPA. (Diskettes must be formatted using DOS 5.0 or higher on an IBM PC or compatible computer.) Diskettes submitted to EPA may be either 5.25-inch or 3.5-inch.

## Labeling Your Submission Diskette

A label must be attached to each diskette (not its jacket). The label may be typed or legibly handwritten. A sample label with the necessary information is shown at right.

The types of packaging and shipping used for magnetic media are left to the discretion of the submitting facility. Please send completed diskettes, along with a cover letter and an original certification signature from each submitting facility to:

EPCRA Reporting Center  
P.O. Box 3348  
Merrifield, VA 22116-3348  
Attn: TRI Magnetic Media Submission

Note: A copy of each Form R or Form A must be submitted to your state. Electronic copies are acceptable for many states. (See the information in the column to the right for more information.)

## Submitting Electronically to States

As of the publication of this book, the following states confirmed that they accept electronic submissions:

|    |    |    |    |
|----|----|----|----|
| AK | ID | NC | SC |
| AZ | IL | ND | SD |
| CA | IN | NJ | UT |
| CO | KS | NM | VA |
| DC | LA | NY | VT |
| DE | MD | NV | WA |
| FL | MI | OH | WI |
| GA | MN | OK | WV |
| HI | MO | OR |    |
| IA | MT | PA |    |

If your state is not listed here, please contact your state office to confirm that paper submissions are required.

|                 |                                          |
|-----------------|------------------------------------------|
| TRIS Report     |                                          |
| COMPANY NAME    |                                          |
| Date: 6/29/96   | Density: HD                              |
| Report Year: 95 | Number: 1 of 1                           |
| Contact:        | TECHNICAL CONTACT NAME<br>(505) 555-5369 |

\* **AFR97 for DOS is included in this package.** AFR97 for **Windows** will soon be available. To request a copy, please call (800) 490-9198 or download it from our web site at [www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr).

## Information to Include in Your Cover Letter

If you are submitting reports on magnetic diskette to EPA, you must enclose a cover letter signed by the official listed in Section 3 of Part I of the Form R (name and official title of owner/operator or senior management official) for *each separate facility*. This letter can be printed from AFR. The following letter is a sample.

Date

To Whom It May Concern:

Enclosed please find one (1) diskette containing toxic chemical release reporting information for:

YOUR FACILITY NAME

This information is submitted as required under Section 313, Title III of the Superfund Amendments and Reauthorization Act of 1986 and the Pollution Prevention Act of 1990.

A total of two (2) reports is included from our facility, concerning the following chemicals:

| Chemical Name  | RY   | CAS Number |
|----------------|------|------------|
| -----          | ---- | -----      |
| Lead compounds | 1997 | NA20       |
| Zinc           | 1997 | 7440-66-6  |

Our technical point of contact is:

TECHNICAL CONTACT NAME, Phone Number: (505) 555-1212,

[NAME] is available should any questions or problems arise as you process these diskettes.

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate, based on reasonable estimates using data available to the preparers of this report.

Signature: Chris Submitter

\* **AFR97 for DOS is included in this package.** AFR97 for **Windows** will soon be available. To request a copy, please call **(800) 490-9198** or download it from our web site at **[www.epa.gov/opptintr/afr](http://www.epa.gov/opptintr/afr)**.

**“Paperwork Reduction Act Notice:** The annual public burden for this collection information is estimated to average 52.1 hours per response for the Form R, and 34.6 hours per response for the Form A, including the time needed to review instructions; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Regulatory Information Division, U.S. Environmental Protection Agency (mail code 2137), 401 M Street, S.W., Washington, DC 20460. Include the OMB number identified above in any correspondence. Do not send the completed form to this address. The actual information or form should be submitted in accordance with the instructions accompanying the form, or as specified in the corresponding regulations.”

TOXIC RELEASE INVENTORY FORM R

(IMPORTANT: Type or print; read instructions before completing form)

United States  
Environmental Protection  
Agency**FORM R**Section 313 of the Emergency Planning and Community  
Right-to-Know Act of 1986, also known as Title III of the Superfund  
Amendments and Reauthorization Act**TOXIC CHEMICAL RELEASE  
INVENTORY REPORTING FORM****WHERE TO SEND COMPLETED FORMS:**1. EPCRA Reporting Center  
P.O. Box 3348  
Merrifield, VA 22116-3348  
ATTN: TOXIC CHEMICAL RELEASE INVENTORY2. APPROPRIATE STATE OFFICE  
(See instructions in Appendix F)Enter "X" here if this  
is a revision

For EPA use only

**IMPORTANT:** See instructions to determine when "Not Applicable (NA)" boxes should be checked.**PART I. FACILITY IDENTIFICATION INFORMATION****SECTION 1. REPORTING YEAR** 19 \_\_\_\_**SECTION 2. TRADE SECRET INFORMATION**

|     |                                                                                 |                                                                |     |                                                                                                                       |
|-----|---------------------------------------------------------------------------------|----------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------|
| 2.1 | Are you claiming the toxic chemical identified on page 2 trade secret?          |                                                                | 2.2 | Is this copy <input type="checkbox"/> Sanitized <input type="checkbox"/> Unsanitized<br>(Answer only if "YES" in 2.1) |
|     | <input type="checkbox"/> Yes (Answer question 2.2; Attach substantiation forms) | <input type="checkbox"/> No Do not answer 2.2; go to Section 3 |     |                                                                                                                       |

**SECTION 3. CERTIFICATION (Important: Read and sign after completing all form sections.)**

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

|                                                                          |            |              |
|--------------------------------------------------------------------------|------------|--------------|
| Name and official title of owner/operator or senior management official: | Signature: | Date signed: |
|                                                                          |            |              |

**SECTION 4. FACILITY IDENTIFICATION**

|                                    |                                                                                      |
|------------------------------------|--------------------------------------------------------------------------------------|
| TRI Facility ID Number             |                                                                                      |
| 4.1 Facility or Establishment Name | Facility or Establishment Name or Mailing Address (if different from street address) |
| Street                             | Mailing Address                                                                      |
| City/County/State/Zip Code         | City/County/State/Zip Code                                                           |

|     |                                                                                           |                                                |                                                |                                                |
|-----|-------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|
| 4.2 | This report contains information for:<br>(Important: check a or b; check c if applicable) | a. <input type="checkbox"/> An entire facility | b. <input type="checkbox"/> Part of a facility | c. <input type="checkbox"/> A Federal facility |
|-----|-------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|

|     |                        |                                      |
|-----|------------------------|--------------------------------------|
| 4.3 | Technical Contact Name | Telephone Number (include area code) |
| 4.4 | Public Contact Name    | Telephone Number (include area code) |

|     |                        |         |         |         |           |         |         |         |
|-----|------------------------|---------|---------|---------|-----------|---------|---------|---------|
| 4.5 | SIC Code(s) (4 digits) | a.      | b.      | c.      | d.        | e.      | f.      |         |
| 4.6 | Latitude               | Degrees | Minutes | Seconds | Longitude | Degrees | Minutes | Seconds |

|     |                                       |     |                                                              |     |                                                |      |                                                                  |
|-----|---------------------------------------|-----|--------------------------------------------------------------|-----|------------------------------------------------|------|------------------------------------------------------------------|
| 4.7 | Dun & Bradstreet Number(s) (9 digits) | 4.8 | EPA Identification Number(s) (RCRA I.D. No.) (12 characters) | 4.9 | Facility NPDES Permit Number(s) (9 characters) | 4.10 | Underground Injection Well Code (UIC) I.D. Number(s) (12 digits) |
| a.  | a.                                    | a.  | a.                                                           | a.  | a.                                             | a.   | a.                                                               |
| b.  | b.                                    | b.  | b.                                                           | b.  | b.                                             | b.   | b.                                                               |

**SECTION 5. PARENT COMPANY INFORMATION**

|     |                                          |                                        |
|-----|------------------------------------------|----------------------------------------|
| 5.1 | Name of Parent Company                   | <input type="checkbox"/> NA            |
| 5.2 | Parent Company's Dun & Bradstreet Number | <input type="checkbox"/> NA (9 digits) |

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**EPA FORM R**  
**PART II. CHEMICAL - SPECIFIC INFORMATION**

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

**SECTION 1. TOXIC CHEMICAL IDENTITY**

(Important: DO NOT complete this section if you completed Section 2 below.)

**1.1 CAS NUMBER** (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)

**1.2 Toxic Chemical or Chemical Category Name** (Important: Enter only one name exactly as it appears on the Section 313 list.)

**1.3 Generic Chemical Name** (Important: Complete only if Part I, Section 2.1 is checked "yes". Generic name must be structurally descriptive.)

**SECTION 2. MIXTURE COMPONENT IDENTITY**

(Important: DO NOT complete this section if you complete Section 1 above.)

**2.1 Generic Chemical Name Provided by Supplier** (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.)

**SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY** (Important: Check all that apply.)

|                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                       |                                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3.1 Manufacture the toxic chemical:</b>                                                                                                                                                                                                                                                                 | <b>3.2 Process the toxic chemical:</b>                                                                                                                                                                | <b>3.3 Otherwise use the toxic chemical:</b>                                                                                                                         |
| a. <input type="checkbox"/> Produce b. <input type="checkbox"/> Import<br>If produce or import:<br>c. <input type="checkbox"/> For on-site use/processing<br>d. <input type="checkbox"/> For sale/distribution<br>e. <input type="checkbox"/> As a byproduct<br>f. <input type="checkbox"/> As an impurity | a. <input type="checkbox"/> As a reactant<br>b. <input type="checkbox"/> As a formulation component<br>c. <input type="checkbox"/> As an article component<br>d. <input type="checkbox"/> Repackaging | a. <input type="checkbox"/> As a chemical processing aid<br>b. <input type="checkbox"/> As a manufacturing aid<br>c. <input type="checkbox"/> Ancillary or other use |

**SECTION 4. MAXIMUM AMOUNT OF THE TOXIC CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR**

**4.1**  (Enter two-digit code from instruction package.)

**SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM**

|                           |                                                                          | A. Total Release (pounds/year)(enter range from instructions or estimate) | B. Basis of estimate (enter code) | C. % From Stormwater |
|---------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>5.1</b>                | Fugitive or non-point air emissions                                      | NA <input type="checkbox"/>                                               |                                   |                      |
| <b>5.2</b>                | Stack or point air emissions                                             | NA <input type="checkbox"/>                                               |                                   |                      |
| <b>5.3</b>                | Discharges to receiving streams or water bodies (enter one name per box) |                                                                           |                                   |                      |
| Stream or Water Body Name |                                                                          |                                                                           |                                   |                      |
| <b>5.3.1</b>              |                                                                          |                                                                           |                                   |                      |
| <b>5.3.2</b>              |                                                                          |                                                                           |                                   |                      |
| <b>5.3.3</b>              |                                                                          |                                                                           |                                   |                      |
| <b>5.4.1</b>              | Underground Injection on-site to Class I Wells                           | NA <input type="checkbox"/>                                               |                                   |                      |
| <b>5.4.2</b>              | Underground Injection on-site to Class II-V Wells                        | NA <input type="checkbox"/>                                               |                                   |                      |

If additional pages of Part II, Section 5.3 are attached, indicate the total number of pages in this box  and indicate which Part II, Section 5.3 page this is, here  (example: 1,2,3, etc.)

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**EPA FORM R**  
**PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

**SECTION 5. QUANTITY OF THE TOXIC CHEMICAL ENTERING EACH ENVIRONMENTAL MEDIUM**

|                                          | NA                       | A. Total Release (pounds/year) (enter range code from instructions or estimate) | B. Basis of Estimate (enter code) |
|------------------------------------------|--------------------------|---------------------------------------------------------------------------------|-----------------------------------|
| 5.5 Disposal to land on-site             |                          |                                                                                 |                                   |
| 5.5.1A RCRA Subtitle C landfills         | <input type="checkbox"/> |                                                                                 |                                   |
| 5.5.1B Other landfills                   | <input type="checkbox"/> |                                                                                 |                                   |
| 5.5.2 Land treatment/application farming | <input type="checkbox"/> |                                                                                 |                                   |
| 5.5.3 Surface impoundment                | <input type="checkbox"/> |                                                                                 |                                   |
| 5.5.4 Other disposal                     | <input type="checkbox"/> |                                                                                 |                                   |

**SECTION 6. TRANSFERS OF THE TOXIC CHEMICAL IN WASTES TO OFF-SITE LOCATIONS**

**6.1 DISCHARGES TO PUBLICLY OWNED TREATMENT WORKS (POTWs)**

**6.1.A. Total Quantity Transferred to POTWs and Basis of Estimate**

| 6.1.A.1. Total Transfers (pounds/year)<br>(enter range code or estimate) | 6.1.A.2 Basis of Estimate<br>(enter code) |
|--------------------------------------------------------------------------|-------------------------------------------|
|                                                                          |                                           |

|                                           |  |       |  |        |  |
|-------------------------------------------|--|-------|--|--------|--|
| 6.1.B. <input type="checkbox"/> POTW Name |  |       |  |        |  |
| POTW Address                              |  |       |  |        |  |
| City                                      |  | State |  | County |  |
| Zip                                       |  |       |  |        |  |
| 6.1.B. <input type="checkbox"/> POTW Name |  |       |  |        |  |
| POTW Address                              |  |       |  |        |  |
| City                                      |  | State |  | County |  |
| Zip                                       |  |       |  |        |  |

If additional pages of Part II, Section 6.1 are attached, indicate the total number of pages in this box  and indicate which Part II, Section 6.1 page this is here  (example: 1,2,3, etc.)

**SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS**

|                                                                                                                             |  |       |  |        |  |
|-----------------------------------------------------------------------------------------------------------------------------|--|-------|--|--------|--|
| 6.2 <input type="checkbox"/> OFF-SITE EPA IDENTIFICATION NUMBER (RCRA ID NO.)                                               |  |       |  |        |  |
| Off-Site Location Name                                                                                                      |  |       |  |        |  |
| Off-Site Address                                                                                                            |  |       |  |        |  |
| City                                                                                                                        |  | State |  | County |  |
| Zip                                                                                                                         |  |       |  |        |  |
| Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input type="checkbox"/> No |  |       |  |        |  |

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**EPA FORM R**  
**PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**

TRI FACILITY ID NUMBER

Toxic Chemical Category or Generic Name

**SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS (continued)**

| A. Total Transfers (pounds/year)<br>(enter range code or estimate) | B. Basis of Estimate<br>(enter code) | C. Type of Waste Treatment/Disposal/<br>Recycling/Energy Recovery (enter code) |
|--------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------|
| 1.                                                                 | 1.                                   | 1.M                                                                            |
| 2.                                                                 | 2.                                   | 2.M                                                                            |
| 3.                                                                 | 3.                                   | 3.M                                                                            |
| 4.                                                                 | 4.                                   | 4.M                                                                            |

6.2 OFF-SITE EPA IDENTIFICATION NUMBER (RCRA ID NO.)

Off-Site Location Name

Off-Site Address

|      |       |        |     |
|------|-------|--------|-----|
| City | State | County | Zip |
|------|-------|--------|-----|

Is location under control of reporting facility or parent company?

☐ Yes☐ No

| A. Total Transfers (pound/year)<br>(enter range code or estimate) | B. Basis of Estimate<br>(enter code) | C. Type of Waste Treatment/Disposal/<br>Recycling/Energy Recovery (enter code) |
|-------------------------------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------|
| 1.                                                                | 1.                                   | 1.M                                                                            |
| 2.                                                                | 2.                                   | 2.M                                                                            |
| 3.                                                                | 3.                                   | 3.M                                                                            |
| 4.                                                                | 4.                                   | 4.M                                                                            |

**SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY**



**Not Applicable (NA) - Check here if no on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category.**

| a. General Waste Stream<br>(enter code) | b. Waste Treatment Method(s) Sequence<br>(enter 3-character code(s)) | c. Range of Influent Concentration | d. Waste Treatment Efficiency Estimate | e. Based on Operating Data?                              |
|-----------------------------------------|----------------------------------------------------------------------|------------------------------------|----------------------------------------|----------------------------------------------------------|
| 7A.1a                                   | 7A.1b                                                                | 7A.1c                              | 7A.1d                                  | 7A.1e                                                    |
|                                         | 1 <input type="text"/> 2 <input type="text"/>                        |                                    |                                        |                                                          |
|                                         | 3 <input type="text"/> 4 <input type="text"/> 5 <input type="text"/> |                                    | %                                      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|                                         | 6 <input type="text"/> 7 <input type="text"/> 8 <input type="text"/> |                                    |                                        |                                                          |
| 7A.2a                                   | 7A.2b                                                                | 7A.2c                              | 7A.2d                                  | 7A.2e                                                    |
|                                         | 1 <input type="text"/> 2 <input type="text"/>                        |                                    |                                        |                                                          |
|                                         | 3 <input type="text"/> 4 <input type="text"/> 5 <input type="text"/> |                                    | %                                      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|                                         | 6 <input type="text"/> 7 <input type="text"/> 8 <input type="text"/> |                                    |                                        |                                                          |
| 7A.3a                                   | 7A.3b                                                                | 7A.3c                              | 7A.3d                                  | 7A.3e                                                    |
|                                         | 1 <input type="text"/> 2 <input type="text"/>                        |                                    |                                        |                                                          |
|                                         | 3 <input type="text"/> 4 <input type="text"/> 5 <input type="text"/> |                                    | %                                      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|                                         | 6 <input type="text"/> 7 <input type="text"/> 8 <input type="text"/> |                                    |                                        |                                                          |
| 7A.4a                                   | 7A.4b                                                                | 7A.4c                              | 7A.4d                                  | 7A.4e                                                    |
|                                         | 1 <input type="text"/> 2 <input type="text"/>                        |                                    |                                        |                                                          |
|                                         | 3 <input type="text"/> 4 <input type="text"/> 5 <input type="text"/> |                                    | %                                      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|                                         | 6 <input type="text"/> 7 <input type="text"/> 8 <input type="text"/> |                                    |                                        |                                                          |
| 7A.5a                                   | 7A.5b                                                                | 7A.5c                              | 7A.5d                                  | 7A.5e                                                    |
|                                         | 1 <input type="text"/> 2 <input type="text"/>                        |                                    |                                        |                                                          |
|                                         | 3 <input type="text"/> 4 <input type="text"/> 5 <input type="text"/> |                                    | %                                      | Yes <input type="checkbox"/> No <input type="checkbox"/> |
|                                         | 6 <input type="text"/> 7 <input type="text"/> 8 <input type="text"/> |                                    |                                        |                                                          |

If additional pages of Part II, Sections 6.2/7A are attached, indicate the total number of pages in this box  and indicate which Part II, Sections 6.2/7A page this is, here.  (example: 1.2.3. etc.)

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**EPA FORM R**  
**PART II. CHEMICAL-SPECIFIC INFORMATION (CONTINUED)**

TRI FACILITY ID NUMBER

Toxic Chemical, Category, or Generic Name

**SECTION 7B. ON-SITE ENERGY RECOVERY PROCESSES**

☐

**Not Applicable (NA) - Check here if no on-site energy recovery is applied to any waste stream containing the toxic chemical or chemical category.**

Energy Recovery Methods [enter 3-character code (s)]

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**SECTION 7C. ON-SITE RECYCLING PROCESSES**

☐

**Not applicable (NA) - Check here if no on-site recycling is applied to any waste stream containing the toxic chemical or chemical category.**

Recycling Methods [enter 3-character code(s)]

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**SECTION 8. SOURCE REDUCTION AND RECYCLING ACTIVITIES**

| All quantity estimates can be reported using up to two significant figures. |                                                                                                                                                                        | Column A<br>Prior Year<br>(pounds/year)    | Column B<br>Current Reporting Year<br>(pounds/year) | Column C<br>Following Year<br>(pounds/year) | Column D<br>Second Following Year<br>(pounds/year)       |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------|---------------------------------------------|----------------------------------------------------------|
| 8.1                                                                         | Quantity released*                                                                                                                                                     |                                            |                                                     |                                             |                                                          |
| 8.2                                                                         | Quantity used for energy recovery on-site                                                                                                                              |                                            |                                                     |                                             |                                                          |
| 8.3                                                                         | Quantity used for energy recovery off-site                                                                                                                             |                                            |                                                     |                                             |                                                          |
| 8.4                                                                         | Quantity recycled on-site                                                                                                                                              |                                            |                                                     |                                             |                                                          |
| 8.5                                                                         | Quantity recycled off-site                                                                                                                                             |                                            |                                                     |                                             |                                                          |
| 8.6                                                                         | Quantity treated on-site                                                                                                                                               |                                            |                                                     |                                             |                                                          |
| 8.7                                                                         | Quantity treated off-site                                                                                                                                              |                                            |                                                     |                                             |                                                          |
| 8.8                                                                         | Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes (pounds/year)   |                                            |                                                     |                                             |                                                          |
| 8.9                                                                         | Production ratio or activity index                                                                                                                                     |                                            |                                                     |                                             |                                                          |
| 8.10                                                                        | Did your facility engage in any source reduction activities for this chemical during the reporting year? If not, enter "NA" in Section 8.10.1 and answer Section 8.11. |                                            |                                                     |                                             |                                                          |
|                                                                             | Source Reduction Activities<br>[enter code(s)]                                                                                                                         | Methods to Identify Activity (enter codes) |                                                     |                                             |                                                          |
| 8.10.1                                                                      |                                                                                                                                                                        | a.                                         | b.                                                  | c.                                          |                                                          |
| 8.10.2                                                                      |                                                                                                                                                                        | a.                                         | b.                                                  | c.                                          |                                                          |
| 8.10.3                                                                      |                                                                                                                                                                        | a.                                         | b.                                                  | c.                                          |                                                          |
| 8.10.4                                                                      |                                                                                                                                                                        | a.                                         | b.                                                  | c.                                          |                                                          |
| 8.11                                                                        | Is additional optional information on source reduction, recycling, or pollution control activities included with this report? (Check one box)                          |                                            |                                                     |                                             | YES <input type="checkbox"/> NO <input type="checkbox"/> |

\* Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment." Do not include any quantity treated on-site or off-site.

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TOXIC RELEASE INVENTORY FORM A

(IMPORTANT: Type or print; read instructions before completing form)

Form Approved: OMB # 2070-0143 Form Expires: 05/31/98

Page 1 of 2

United States  
Environmental Protection Agency**TOXIC CHEMICAL RELEASE INVENTORY  
FORM A****WHERE TO SEND  
THIS STATEMENT:**

1. EPCRA Reporting Center

P.O. Box 3348

Merrifield, VA 22116-3348

ATTN: TOXIC CHEMICAL RELEASE INVENTORY

2. APPROPRIATE STATE OFFICE

(See instructions in Appendix F)

Enter "X" here if  
this is a revision**PART I. FACILITY IDENTIFICATION INFORMATION****SECTION 1.****REPORTING  
YEAR**

19 \_\_\_\_

**SECTION 2. TRADE SECRET INFORMATION****2.1**

Are you claiming the toxic chemical identified on page 2 trade secret?

☐Yes: Answer question 2.2 and  
attach substantiation forms.☐No: Do not answer 2.2; continue  
with Section 3.**2.2**

If you answered yes in 2.1, is this copy:

☐

Sanitized

☐

Unsanitized

**SECTION 3. CERTIFICATION (Important: Please read and sign after completing the statement.)**

I hereby certify that to the best of my knowledge and belief, for the toxic chemical listed in this statement, the annual reportable amount, as defined in 40 CFR 372.27(a), did not exceed 500 pounds for this reporting year and that the chemical was manufactured, processed, or otherwise used in an amount not exceeding 1 million pounds during this reporting year.

Name and official title of owner/operator or senior management official

Signature

Date Signed

**SECTION 4. FACILITY IDENTIFICATION**

Facility or Establishment Name

TRI Facility ID Number

Mailing Address (if different from street address)

City

State

Zip Code

**4.1**

Street Address

City

County

State

Zip Code

**4.2****This report contains information for:**

(Important: check c if applicable; a and b have been intentionally left blank)

c. ☐A Federal  
facility**4.3****Technical Contact**

Name

Telephone Number (include area code)

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(IMPORTANT: Type or print; read instructions before completing form)

Page 2 of 2


 United States  
Environmental Protection Agency

**TOXIC CHEMICAL RELEASE INVENTORY  
FORM A**
**SECTION 4. FACILITY IDENTIFICATION (Continued)**

|      |                                                                        |          |         |         |           |         |         |
|------|------------------------------------------------------------------------|----------|---------|---------|-----------|---------|---------|
| 4.4  | Intentionally left blank                                               |          |         |         |           |         |         |
| 4.5  | SIC Code<br>(4-digit)                                                  | a.       | b.      | c.      | d.        | e.      | f.      |
| 4.6  | Latitude<br>and<br>Longitude                                           | Latitude |         |         | Longitude |         |         |
|      |                                                                        | Degrees  | Minutes | Seconds | Degrees   | Minutes | Seconds |
| 4.7  | Dun & Bradstreet Number(s) (9 digits)                                  | a.       |         |         |           |         |         |
|      |                                                                        | b.       |         |         |           |         |         |
| 4.8  | EPA Identification Number(s) (RCRA I.D. No.)<br>(12 characters)        | a.       |         |         |           |         |         |
|      |                                                                        | b.       |         |         |           |         |         |
| 4.9  | Facility NPDES Permit Number(s)<br>(9 characters)                      | a.       |         |         |           |         |         |
|      |                                                                        | b.       |         |         |           |         |         |
| 4.10 | Underground Injection Well Code (UIC) I.D.<br>Number(s)<br>(12 digits) | a.       |         |         |           |         |         |
|      |                                                                        | b.       |         |         |           |         |         |

**SECTION 5. PARENT COMPANY INFORMATION**

|     |                                          |            |  |
|-----|------------------------------------------|------------|--|
| 5.1 | Name of Parent Company                   |            |  |
|     | <input type="checkbox"/> NA              |            |  |
| 5.2 | Parent Company's Dun & Bradstreet Number |            |  |
|     | <input type="checkbox"/> NA              | (9 digits) |  |

**PART II. CHEMICAL IDENTIFICATION**
**SECTION 1. TOXIC CHEMICAL IDENTITY**

|     |                                                                                                                                                    |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1 | CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.) |
| 1.2 | Toxic Chemical or Chemical Category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)                           |
| 1.3 | Generic Chemical Name (Important: Complete only if Part I, Section 2.1 is checked "yes." Generic Name must be structurally descriptive.)           |

**SECTION 2. MIXTURE COMPONENT IDENTITY** (Important: DO NOT complete this section if you complete Section 1 above.)

|     |                                                                                                                                        |
|-----|----------------------------------------------------------------------------------------------------------------------------------------|
| 2.1 | Generic Chemical Name Provided by Supplier (Important: Maximum of 70 characters, including numbers, letters, spaces, and punctuation.) |
|-----|----------------------------------------------------------------------------------------------------------------------------------------|

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left blank.

Please do not copy  
double-sided!

SECTIONS 1 - 8

## A. General Information

Reporting to the Toxic Chemical Release Inventory (TRI) is required by section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA, or Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99-499. The information contained in the Form R constitutes a "report," and the submission of a report to the appropriate authorities constitutes "reporting."

The Pollution Prevention Act, passed into law in October, 1990 (Pub. L. 101-508), added reporting requirements to Form R. These requirements affect all facilities required to submit Form R under section 313 of EPCRA. The data were required beginning with reports for calendar year 1991.

Reporting is required to provide the public with information on the releases of listed toxic chemicals in their communities and to provide EPA with release information to assist the Agency in determining the need for future regulations. Facilities must report the quantities of both routine and accidental releases of listed toxic chemicals, as well as the maximum amount of the listed toxic chemical on-site during the calendar year and the amount contained in wastes managed on-site or transferred off-site.

A completed Form R or Form A must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as described in the reporting rule in 40 CFR Part 372 (originally published February 16, 1988, in the Federal Register). These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

### A.1 Who Must Report

Section 313 of EPCRA requires that reports be filed by owners and operators of facilities that meet all of the following criteria.

- ☐ The facility has 10 or more full-time employees; and
- ☐ The facility is included in Standard Industrial Classification (SIC) Codes 20 through 39; and
- ☐ The facility manufactures (defined to include importing), processes, or otherwise uses any listed toxic chemical in quantities greater than the established threshold in the course of a calendar year.

### A.2 How to Assemble a Complete Report

#### A.2.a The Toxic Chemical Release Reporting Form, EPA Form R

EPA Form R consist of two parts:

- ☐ Part I, Facility Identification Information (page 1); and
- ☐ Part II, Chemical-Specific Information (pages 2-5).

Most of the information required in Part I of Form R can be completed, photocopied, and attached to each chemical-specific report. However, Part I of each Form R submitted must have an original signature on the certification statement and the trade secret designation must be entered as appropriate. Part II must be completed separately for each toxic chemical or chemical category. Because a complete Form R consists of at least 5 unique pages, any submission containing less than 5 unique pages in not a valid submission.

A complete report for any listed toxic chemical that is not claimed as a trade secret consists of the following completed parts:

- ☐ Part I with an original signature on the certification statement (section 2); and
- ☐ Part II (Note: Section 8 is mandatory).

Staple all 5 pages of each report together. If you check yes on Part II, Section 8.11, you may attach additional information on pollution prevention activities at your facility.

#### A.2.b. The Alternate Toxic Chemical Release Inventory Form, EPA Form A

EPA Form A was established in 1994 as a simplified form of reporting based on an alternate threshold for facilities with low amounts of a listed toxic chemical in waste. The Form A serves as an alternate to Form R, such that completion of the Form A is in leu of Form R. Like the Form R described above, the Form A consists of two parts, but only consists of a total of 2 pages.

- ☐ Part I, Facility Identification Information, which also includes the "certification" regarding the eligibility to use the Form A (page 1 and the top of page 2); and
- ☐ Part II, Chemical Identification (the bottom of page 2).

As with Form R, most of the information in Part I of Form A can be completed, photocopied, and attached to each eligible chemical-specific report, as long as each Form A submitted has an original signature on the certification statement, and the appropriate trade secret designation for the form. Part II of the Form A must be completed separately for each toxic chemical or chemical category. A complete report for Form A consists of 2 pages for each submission.

### A.3 Trade Secret Claims

For any toxic chemical whose identity is claimed as trade secret, you must submit to EPA two versions of the substantiation form as prescribed in 40 CFR Part 350, published July 29, 1988, in the Federal Register (53 FR 28772) as well as two versions of Form R or Form A. One set of forms, the "unsanitized" version, should provide the actual identity of the toxic chemical. The other set of forms, the "sanitized" version, should provide only a generic identity of the toxic chemical. If EPA deems the trade secret substantiation form valid, only the sanitized set of forms will be made available to the public.

Use the order form in this document to obtain copies of the rule and substantiation form. Further explanation of the trade secret provisions is provided in Part I, Sections 2.1 and 2.2, and Part II, Section 1.3, of the instructions.

In summary, a complete report to EPA for a toxic chemical claimed as a trade secret must include all of the following:

- ☐ A completed "unsanitized" version of a Form R or Form A report including the toxic chemical identity (staple the pages together);
- ☐ A sanitized version of a completed Form R or Form A report in which the toxic chemical identity items (Part II, Sections 1.1 and 1.2) have been left blank but in which a generic chemical name has been supplied (Part II, Section 1.3) (staple the pages together);
- ☐ A completed "unsanitized" version of a trade secret substantiation form (staple the pages together); and
- ☐ A sanitized version of a completed trade secret substantiation form (staple the pages together).

Securely fasten all four reports together.

Some states also require submission of both sanitized and unsanitized reports for toxic chemicals whose identity is claimed as a trade secret. Others require only a sanitized version. Facilities may jeopardize the trade secret status of a toxic chemical by submitting an unsanitized version of Form R or Form A to a state agency or Indian tribe that does not require unsanitized forms. You may identify an individual State's submission requirements by contacting the appropriate state-designated Section 313 contact (see Appendix F).

### A.4 Recordkeeping

Sound recordkeeping practices are essential for accurate and efficient TRI reporting. It is in the facility's interest, as well as EPA's, to maintain records properly.

Facilities must keep a copy of each report filed for at least three years from the date of submission. These reports will be of use in subsequent years when completing future reports.

Facilities must also maintain those documents, calculations, worksheets, and other forms upon which they relied to gather information for prior reports. In the event of a problem with data elements on a facility's Form R or Form A, EPA may request documentation from the facility that supports the information reported.

EPA may conduct data quality reviews of Form R or Form A submissions. An essential component of this process involves reviewing a facility's records for accuracy and completeness.

Facilities should keep a record for those toxic chemicals for which they did not file a Form even though they are not required to.

A partial list of records, organized by year, that a facility should maintain include:

- ☐ Previous years' Form Rs and Form As;
- ☐ Section 313 Reporting Threshold Worksheets;
- ☐ Engineering calculations and other notes;
- ☐ Purchase records from suppliers;
- ☐ Inventory data;
- ☐ EPA (NPDES) permits and monitoring reports;
- ☐ EPCRA Section 312, Tier II Reports;
- ☐ Monitoring records;
- ☐ Flowmeter data;
- ☐ RCRA Hazardous Waste Generator's Report;
- ☐ Pretreatment reports filed by the facility with the local government;
- ☐ Invoices from waste management companies;
- ☐ Manufacturer's estimates of treatment efficiencies;

- ☐ RCRA Manifests;
- ☐ Process diagrams that indicate emissions and other releases; and
- ☐ Record for those toxic chemicals for which they did not file a Form.

### A.5 How to Prepare a Voluntary Revision of a Previous Submission

Voluntary revisions must be submitted by October 15th of the same year as the reporting deadline in order for the revised data to be included in the next TRI data release. Revisions should be submitted on a Form R or Form A identical to the version originally submitted to EPA for that reporting year. The Emergency Planning and Community Right-to-Know Information Hotline can help you identify the version of Form R or Form A used for each reporting year.

There are two options for making voluntary revisions:

The first is to submit a photocopy of your original submission (from your file), with the corrections made in blue or black ink. Re-sign and re-date the certification statement on page 1. For revisions to 1990 and earlier reporting year submissions, write the words "VOLUNTARY REVISION" on page 1 of the Form. For revisions to 1991 and later reporting year submissions, on page 1 of the form, enter "X" in the space marked "Enter 'X' here if this is a revision."

The second option is to obtain a blank Form for the reporting year affected by the correction(s). Complete all data elements on this Form. Sign and date the certification statement on page 1. For revisions to 1990 and earlier reporting year submissions, write the words "VOLUNTARY REVISION" on page 1 of the Form R. For revision to 1991 and later reporting year submissions, on page 1 of the form, enter "X" in the space marked "Enter 'X' here if this is a revision."

If you submitted your Form data on magnetic media, the EPA software allows you to revise your Form data and submit your revisions on magnetic media as well. The documentation provided with the magnetic media submission software contains specific instructions, or you may call the magnetic media User Support Hotline at (703) 816-4434. The USER Support Hotline number is to be used for the AFR Software and does not provide regulatory support. If you submitted your Form data using software developed by an EPA approved Form software developer, you must contact the software developer, to determine if the software you used allows for magnetic media revisions. Please be careful when submitting magnetic media revisions to resubmit only the

revised submissions. Do not resubmit a diskette containing all of your original submissions if you are only revising one or a few of them.

### Where to Submit a Voluntary Revision of a Previous Submission

Revisions should be submitted to EPA and the appropriate state agency (or the designated official of an Indian tribe) to whom you submitted the original Form (see Section A.6).

Please note: submissions for the next reporting year are NOT considered revisions of the previous year's data.

### A.6 When the Report Must be Submitted

The report for any calendar year must be submitted on or before July 1 of the following year whether using Form R or Form A. Any voluntary revision to a report can be submitted anytime during the calendar year, for the current or any previous reporting year.

#### A.6a Where to Send the Forms

Submissions must be sent to both EPA and the State (or the designated official of an Indian tribe). If a Report is not received by both EPA and the State (or the designated official of an Indian tribe), the submitter is considered out of compliance and subject to enforcement action.

Send reports to EPA by regular mail to:

EPCRA Reporting Center  
P.O. Box 3348  
Merrifield, VA 22116-3348  
Attn: Toxic Chemical Release Inventory

Certified mail, Overnight mail and hand-delivered submissions only should be addressed to:

EPCRA Reporting Center.  
c/o Computer Based Systems Inc.  
Suite 300  
4600 North Fairfax Drive  
Arlington, VA 22203  
(703) 816-4445

In addition, you must also send a copy of the report to the State in which the facility is located. ("State" also includes: the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction.) Refer to Appendix F for the appropriate State submission addresses.

Facilities located on Indian land should send a copy to the Chief Executive Officer of the applicable Indian tribe. Some tribes have entered into a cooperative agreement with States; in this case, report submissions should be sent to the entity designated in the cooperative agreement.

Submission of section 313 reports in magnetic media and computer-generated facsimile formats has been approved by EPA. EPA has developed a package called the "Toxic Chemical Release Inventory Reporting System". The easy-to-use diskettes come with complete instructions for their use (See "TRI Automated Form R (AFR) Software for Reporting Year 1997" and enclosed diskettes). It also provides prompts and messages to help you report according to EPA instructions. For copies of the diskette you may call the EPCRA Hotline.

Many firms are offering computer software to assist facilities in producing magnetic media submissions or computer-generated facsimiles of Form R or Form A reports. To ensure accuracy, EPA will only accept magnetic media submissions and computer-generated facsimiles that meet basic specifications established by EPA. To determine if the software offered by a firm meets these specifications, EPA reviews and approves all software upon request. Call the Emergency Planning and Community Right-to-Know Information Hotline to identify the software that has been approved by EPA for the current reporting year.

It should be noted, however, that some States may accept only hard copies of Form R or Form A. If this is the case, a magnetic media or computer-generated facsimile may be unacceptable.

## **A.7 How to Obtain Forms and Other Information**

A copy of both Forms is included in this booklet. Remove the appropriate form and produce as many photocopies as needed. Related guidance documents may be obtained from:

EPA's TRI Web Site

<http://www.epa.gov/opptintr/tri>

The Emergency Planning and Community Right-to-Know Information Hotline  
(address and telephone number in next column)

U.S. EPA/NCEPI

P.O. Box 42419

Cincinnati, OH 45242-2419

(800) 490-9198

Fax (513) 489-8695

Internet:

<http://www.epa.gov/ncepihom/index.html>

**See Appendix H for the document request form and more information on available documents.**

Questions about completing Form R or Form A may be directed to the Emergency Planning and Community Right-to-Know Information Hotline at the following address or telephone numbers.

Emergency Planning and Community  
Right-to-Know Information Hotline  
U.S. Environmental Protection Agency  
401 M St., SW (5101)  
Washington, DC 20460  
(800) 535-0202, (800) 424-9346 or (703) 412-9877;  
TDD# (800) 553-7672  
from 9:00 am - 6:00 pm Eastern Time  
(Mon.-Fri., except Federal Holidays)

**EPA Regional Staff may also be of assistance. Refer to Appendix G for a list of EPA Regional Offices.**

## B. How to Determine If Your Facility Must Submit A Report

(See figure 1 for more information)

### B.1 Full-Time Employee Determination

A "full-time employee," for purposes of section 313 reporting, is defined as 2,000 work hours per year. The number of full-time employees is dependent only upon the total number of hours worked by all employees for the facility during the calendar year and not the number of persons working. To determine the number of full-time employees working for your facility, add up the hours worked by all employees during the calendar year, including contract employees and sales and support staff working for the facility, and divide the total by 2,000 hours. In other words, if the total number of hours worked by all employees is 20,000 hours or more, your facility meets the ten employee threshold.

Examples include:

- ❑ A facility consists of 11 employees who each worked 1500 hours for the facility in a calendar year. Consequently, the total number of hours worked by all employees for the facility during the calendar year is 16,500 hours. The number of full-time employees for this facility is equal to 16,500 hours divided by 2,000 hours per full-time employee, or 8.3 full-time employees. Therefore, even though 11 persons worked for this facility during the calendar year, the number of hours worked is equivalent to 8.3 full-time employees. This facility does not meet the employee criteria and is not subject to section 313 reporting.
- ❑ Another facility consists of 6 workers and 3 sales staff. The 6 workers each worked 2,000 hours for the facility in the calendar year. The sales staff also each worked 2,000 hours in the calendar year although they may have been on the road half of the year. In addition, 5 contract employees were hired for a period during which each worked 400 hours for the facility. The total number of hours is equal to the time worked by the workers at the facility (12,000 hours), plus the time worked by the sales staff for the facility (6,000 hours), plus the time worked by the contract employees at the facility (2,000 hours), or 20,000 hours. Dividing the 20,000 hours by 2,000 yields 10 full-time employees. This facility has met the full time employee criteria and may be subject to reporting if the other criteria are met.

### B.2 Primary SIC Code Determination

Standard Industrial Classification (SIC) codes 20-39 are covered by the rule and are listed in Table 1. The first two digits of a 4-digit SIC code define a major business sector, while the last two digits denote a facility's specialty within the major sector. For a detailed description of 4-digit SIC codes, refer to the "Standard Industrial Classification Manual 1987." The facility should determine its own SIC code (s), based on its activities on-site, using the SIC Manual. State agencies and other organizations may assign SIC codes on a different basis than the one used by the SIC Manual. However, for purposes of TRI reporting, these state assigned codes should not be used if they differ from ones assigned using the SIC Manual.

The EPCRA Hotline can assist facilities with determining which SIC codes are assigned for specific business activities as referenced in the SIC Manual. Clothbound editions of the SIC Manual are available in most major libraries or may be ordered through the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 605-6000. The access number for the clothbound manual is PB87-100012, and the price is \$30.00.

The North American Industry Classification System (NAICS), is a new economic classification system that will replace the 1987 SIC Code system. EPA will address the SIC code change, as it relates to EPCRA in an upcoming Federal Register notice. This upcoming change does NOT affect the 1997 EPCRA section 313 reporting.

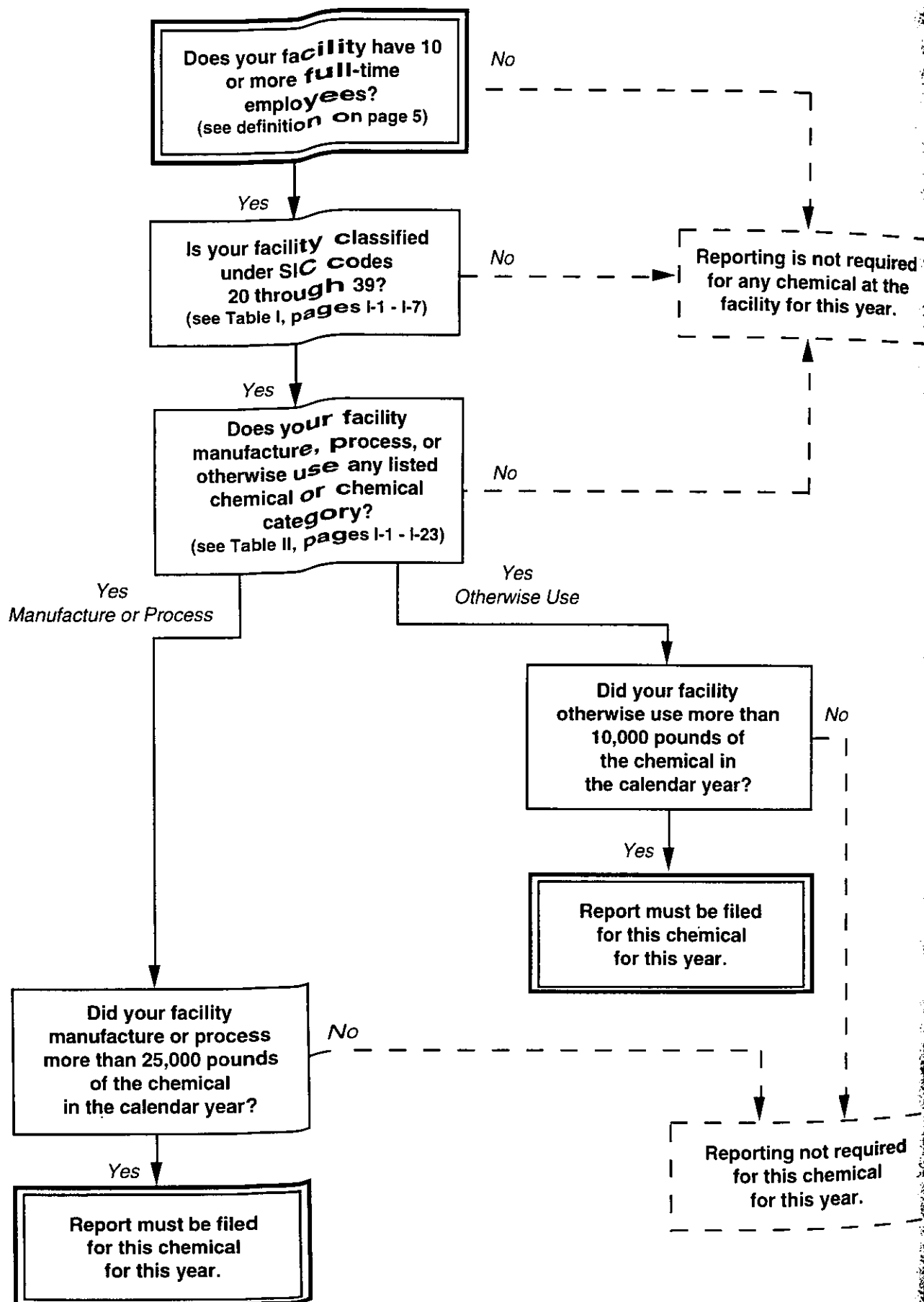
#### B.2.a Multi-Establishment Facilities

Your facility may include multiple establishments that have different SIC codes. A multi-establishment facility is a facility that consists of two or more distinct and separate economic units. If your facility is a multi-establishment facility, calculate the value of the products produced or shipped from each establishment within the facility and then use the following rule to determine if your facility meets the SIC code criterion:

- ❑ If the total value of the products shipped from or produced at establishments with primary SIC codes between 20 and 39 is greater than 50 percent of the value of the entire facility's products and services, the entire facility meets the SIC code criterion.

Figure 1

# Determining Applicability of Section 313 Requirement



- If any one establishment with a primary SIC code between 20 and 39 produces or ships products whose value exceeds the value of products and services produced or shipped by any other establishment within the facility, the facility also meets the SIC code criterion.

The value of production attributable to a particular establishment may be isolated by subtracting the product value obtained from other establishments within the same facility from the total product value of the facility. This procedure eliminates the potential for "double counting" production in situations where establishments are engaged in sequential production activities at a single facility.

Examples include:

- One establishment in a gold mining facility is engaged primarily in the exploration of gold deposits, developing mines, and mining gold. This establishment deploys several means to mine the gold, including crushing, grinding, gravity concentration, froth flotation, amalgamation, cyanidation, and the production of bullion at the mine and mill sites (these processes are classified under SIC code 1041, which is not a covered SIC code in reporting year 1997). All of the ore discovered through this establishment is delivered to a second establishment which is primarily engaged in rolling, drawing, and extruding the gold for sale and distribution. The smelting establishment in the facility is classified under SIC code 3339. The facility could calculate the value of production for each establishment separately (both SIC code 1041 and 3339 having separate values). Alternatively, the facility could determine the value of the smelter operation by subtracting the value of the ore produced from the value of entire facility's production (Gross value of facility - SIC code 1041 value = Value for SIC code 3339).
- A food processing establishment in a facility processes crops grown at the facility in a separate establishment. The facility could base the value of the products of each establishment on the total production value of each establishment. Alternatively, the facility could first determine the value of the crops grown at the agricultural establishment, and then calculate the contribution of the food processing establishment by subtracting the crop value from the total value of the product shipped from the processing establishment (Value of product shipped from processing - crop value = value of processing establishment)

A covered multi-establishment facility must make toxic chemical threshold determinations and, if required, must report all relevant information about releases, source reduction, recycling, and waste management activities associated with a listed toxic chemical for the entire facility, even from establishments that are not in SIC codes 20-39. EPA realizes, however, that certain establishments in a multi-establishment facility can be, for all practical purposes, separate business units. Therefore, individual establishments may report releases and other waste management activities separately, provided that the total releases for the whole facility is represented by the sum of the quantities and other quantities managed as waste reported by the separate establishments and the compliance determination is based on the entire facility.

### B.2.b Auxiliary Facilities

An auxiliary facility is one that supports another facility's activities (e.g., research and development laboratories, warehouses, and storage facilities). An auxiliary facility can assume the SIC code of another covered facility if its primary function is to service that other covered facility's operations. Thus, a separate warehouse facility (i.e., one not located within the physical boundaries of a covered facility) may become a covered facility because it services a facility in SIC codes 20-39. Auxiliary facilities that are in SIC codes 20-39 are required to report if they meet the employee criterion and reporting thresholds for manufacture, process, or otherwise use.

### B.2.c Property Owners

You are not required to report if you merely own real estate on which a facility covered by this rule is located; that is, you have no other business interest in the operation of that facility (e.g., your company owns an industrial park). The operator of that facility, however, is subject to reporting requirements.

## B.3 Activity Determination

### B.3.a Definitions of "Manufacture," "Process," and "Otherwise Use"

**Manufacture:** The term "manufacture" means to produce, prepare, compound, or import a listed toxic chemical. (See Part II, Section 3.1 of these instructions for further clarification.)

Import is defined as causing the toxic chemical to be imported into the customs territory of the United States. If you order a listed toxic chemical (or a mixture containing the chemical) from a foreign supplier, then you have imported the chemical when that shipment arrives at

your facility directly from a source outside of the United States. By ordering the chemical, you have "caused it to be imported," even though you may have used an import brokerage firm as an agent to obtain the toxic chemical.

### *Do Not Overlook Coincidental Manufacture*

The term manufacture also includes coincidental production of a toxic chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, otherwise use, or treatment of other chemical substances. In the case of coincidental production of an impurity (i.e., a toxic chemical that remains in the product that is distributed in commerce), the de minimis exemption, discussed in Section B.4.b of these instructions, applies. The de minimis exemption does not apply to byproducts (e.g., a toxic chemical that is separated from a process stream and further processed or disposed). Certain listed toxic chemicals may be manufactured as a result of wastewater treatment or other treatment processes. For example, neutralization of acid wastewater can result in the coincidental manufacture of ammonium nitrate (solution).

**Process:** The term "process" means the preparation of a listed section 313 chemical, after its manufacture, for distribution in commerce. Processing is usually the intentional incorporation of a section 313 chemical into a product (see Part II, Section 3.2 of these instructions for further clarification). Processing includes preparation of the toxic chemicals in the same physical state or chemical form as that received by your facility, or preparation that produces a change in physical state or chemical form. The term also applies to the processing of a mixture or other trade name product (see Section B.4.b of these instructions) that contains a listed section 313 chemical as one component.

### **Example 1: Coincidental Manufacture**

Your company, a nitric acid manufacturer, uses aqueous ammonia in a waste treatment system to neutralize an acidic wastewater stream containing nitric acid. The reaction of ammonia and nitric acid produces a solution of ammonium nitrate. Ammonium nitrate is reportable under the nitrate compounds category and is manufactured as a byproduct. If the ammonium nitrate is produced in a quantity that exceeds the 25,000 pound manufacturing threshold, the facility must report under the nitrate compounds category.

The aqueous ammonia is considered to be otherwise used and 10% of the total aqueous ammonia would be counted towards the 10,000 pound use threshold. Reports for releases of ammonia must also include 10% of the total aqueous ammonia from the solution of ammonium nitrate (see the qualifier for the ammonia listing).

Combustion of coal and/or fuel in boilers/furnaces can result in the coincidental manufacture of metal compounds and sulfuric acid (acid aerosols), hydrochloric acid (acid aerosols) and hydrogen fluoride.

**Otherwise Use:** The term "otherwise use" encompasses any activity involving a listed toxic chemical at a facility that does not fall under the definitions of "manufacture" or "process." A chemical that is otherwise used by a facility is not intentionally incorporated into a product distributed in commerce (see Part II, Section 3.3 of these Instructions for further clarification).

### **Example 2: Typical Process and Manufacture Activities**

- ☐ Your company receives toluene, a listed section 313 chemical, from another facility, and reacts the toluene with air to form benzoic acid, which the company distributes in commerce. Your company processes toluene and manufactures and processes benzoic acid. Benzoic acid, however, is not a listed section 313 chemical and thus does not trigger reporting requirements.
- ☐ Your facility combines toluene purchased from a supplier with various materials to form paint. Your facility processes toluene.
- ☐ Your company receives a nickel compound (nickel compounds is a listed section 313 chemical category) as a bulk solid and performs various size-reduction operations (e.g., grinding) before packaging the compound in 50 pound bags, which the company sells. Your company processes the nickel compound.
- ☐ Your company receives a prepared mixture of resin and chopped fiber to be used in the injection molding of plastic products. The resin contains a listed section 313 chemical that becomes incorporated into the plastic, which the company distributes in commerce. Your facility processes the toxic chemical.

**Example 3: Otherwise Use**

When your facility cleans equipment with toluene, you are otherwise using toluene. Your facility also separates two components of a mixture by dissolving one component in toluene, and subsequently recovers the toluene from the process for reuse or disposal. Your facility otherwise uses toluene.

**B.3.b Activity Exemptions**

**Otherwise Use Exemptions.** Certain otherwise uses of listed section 313 chemicals are specifically exempted:

- ☐ otherwise use as a structural component of the facility;
- ☐ otherwise use in routine janitorial or facility grounds maintenance;
- ☐ personal uses by employees or other persons;
- ☐ otherwise use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility; or
- ☐ otherwise use of toxic chemicals contained in intake water (used for processing or non-contact cooling) or in intake air (used either as compressed air or for combustion).

The exemption of otherwise use of a chemical 1) as a structural component of the facility; or 2) in routine janitorial or facility grounds maintenance; or 3) for personal use by an employee cannot be taken for activities involving process-related equipment.

**Article Exemption.** Listed toxic chemicals contained in articles that are processed or otherwise used at a covered facility are exempt from threshold determinations and

release and other waste management determinations. The exemption applies when the facility receives the article from another facility or when the facility produces the article itself. The exemption applies only to the quantity of toxic chemical present in the article. If the toxic chemical is manufactured (including imported), processed, other otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity, the facility is required to report (40 CFR Section 372.38(b)). For a toxic chemical in an item to be exempt as part of the article, the item must meet all the following criteria in the Section 313 article definition; that is, it must be a manufactured item that is formed to a specific shape or design during manufacture, that has end use functions dependent in whole or in part upon its shape or design during end use, and that does not release a toxic chemical under normal circumstances of processing or otherwise use of the item at the facility.

If the processing or otherwise use of all like manufactured items at a facility results in a total release of 0.5 pounds or less of a toxic chemical in a reporting year to any environmental media, EPA will allow this release to be rounded to zero, and the manufactured items remain exempt as articles. EPA requires facilities to round off and report all estimates to the nearest whole number. The 0.5-pound limit does not apply to each individual article, but applies to the sum of all releases from processing or otherwise use of all like articles. If all the releases of like articles over a reporting year are completely captured and sent for recycling/reuse on-site or off-site, the items may remain exempt as articles. Any amount that is released and is not recycled/reused will count toward the 0.5 pound per year cut-off value.

**Example 4: Article Exemption**

- ☐ Lead that is incorporated into a lead acid battery is processed to manufacture the battery, and therefore must be counted toward threshold determinations and release and other waste management determinations. However, the use of the lead acid battery elsewhere in the facility does not have to be counted. Disposal of the battery after its use does not constitute a "release," thus, the battery remains an article.
- ☐ If an item used in the facility is fragmented, the item is still an article if those fragments being discarded remain identifiable as the article (e.g., recognizable pieces of a cylinder, pieces of wire). For instance, an 8-foot piece of wire is broken into two 4-foot pieces of wire, without releasing any toxic chemicals. Each 4-foot piece is identifiable as a piece of wire; therefore, the article status for these pieces of wire remains intact.
- ☐ Toxic chemicals received in the form of pellets are not articles because the pellet form is simply a convenient form for further processing of the material.

The article exemption applies to the normal processing or otherwise use of an article. This exemption does not apply to the manufacture of the article. Toxic chemicals processed into articles produced at a facility must be factored into threshold and release determinations.

If, as a result of processing or otherwise use, an item retains its initial thickness or diameter, in whole or in part, it meets the first part of the definition. If the item's basic dimensional characteristics are totally altered during processing or otherwise use, the item does not meet the first part of the definition. An example of items that do not meet the definition would be items which are cold extruded, such as lead ingots which are formed into wire or rods. On the other hand, cutting a manufactured item into pieces which are recognizable as the article would not change the original dimensions as long as the diameter or the thickness of the item remained the same; the article exemption would continue to apply. Metal wire may be bent and sheet metal may be cut, punched, stamped, or pressed without losing their article status as long as the diameter of the wire or tubing or the thickness of the sheet are not totally changed.

An important aspect of the article exemption is what constitutes a release of a toxic chemical. Any processing or otherwise use of an article that results in a release to the environment (of more than 0.5 pounds) negates the exemption. Cutting, grinding, melting, or other processing of a manufactured item could result in a release of a toxic chemical during normal conditions of processing or otherwise use and therefore, negate the exemption as an article. Scrap pieces which are recognizable as an article do not constitute a release.

**De Minimis Exemption.** The de minimis exemption allows facilities to disregard certain minimal concentrations of chemicals in mixtures or trade name products they process or otherwise use when making threshold determinations and release and other waste management determinations. The de minimis exemption does not apply to the manufacture of a toxic chemical except if that toxic chemical is manufactured as an impurity and remains in the product distributed in commerce, or if the toxic chemical is imported below the appropriate de minimis level. The de minimis exemption does not apply to a byproduct manufactured coincidentally as a result of manufacturing, processing, otherwise use, or any waste management activities.

When determining whether the de minimis exemption applies to a listed toxic chemical, the owner/operator should consider only the concentration of the toxic chemical in mixtures and trade name products in process streams in which the toxic chemical is undergoing a reportable activity. If the toxic chemical in a process

stream is manufactured as an impurity, imported, processed, or otherwise used and is below the appropriate de minimis concentration level, then the quantity of the toxic chemical in that process stream does not have to be applied to threshold determinations nor included in release or other waste management determinations. If a toxic chemical in a process stream is below the appropriate de minimis level, all releases and other waste management activities associated with the toxic chemical in that stream are exempt from EPCRA Section 313 reporting. It is possible to meet an activity (e.g., processing) threshold for a toxic chemical on a facility-wide basis, but not be required to calculate releases or other waste management quantities associated with a particular process because that process involves only mixtures or trade name products containing the toxic chemical below the de minimis level.

Once a toxic chemical concentration is above the appropriate de minimis level in the process stream, threshold determinations and release and other waste management determinations must be made, even if the chemical later falls below the de minimis level in the same process stream. Thus, all releases and other quantities managed as waste that occur after the de minimis level has been exceeded are subject to reporting. If a toxic chemical in a mixture or trade name product above de minimis is brought on-site, the de minimis exemption never applies.

The 0.1% de minimis levels are dictated by determinations made by the National Toxicology Program (NTP), Annual Report on Carcinogens, the International Agency for Research and Cancer (IARC) Monographs, or 29 CFR part 1910, subpart Z. Therefore, once a chemical's status under NTP, IARC, or 29 CFR part 1910, subpart Z indicates that the chemical is a carcinogen or potential carcinogen, the reporting facility may disregard levels of the chemical below the 0.1% de minimis concentration provided that the other criteria for the de minimis exemption is met. De minimis levels for chemical categories apply to the total concentration of all chemicals in the category within a mixture, not the concentration of each individual category member within the mixture.

#### *De Minimis Application to the Processing or Otherwise Use of a Mixture*

The de minimis exemption applies only to the processing or otherwise using, of a listed toxic chemical in a mixture. Threshold and release calculations begin at the point where the chemical exceeds de minimis. If a listed toxic chemical is present in a mixture at a concentration below the de minimis level, this quantity of the substance does not have to be included for threshold determination,

release and other waste management reporting, or supplier notification requirements. The exemption will apply as long as the mixture containing de minimis amounts of a toxic chemical never goes above the de minimis limit. Also, see below the two examples in which a manufacturing activity would qualify for the de minimis exemption.

#### *Examples of Process and Otherwise Use Scenarios*

There are many cases in which the de minimis "limit" is crossed or recrossed within a process or otherwise use scenario. The following examples are meant to illuminate these complex reporting scenarios.

#### *Example of Increasing Process Concentration to Above De minimis Levels*

A manufacturing facility receives toluene which contains less than the de minimis concentration of chlorobenzene. Through distillation, the chlorobenzene content in process streams is increased over the de minimis concentration of 1 percent. From the point at which the chlorobenzene concentration exceeds 1 percent in process streams, the amount present must be factored into threshold determinations and release and other waste management estimates. The facility does not need to consider the amount of chlorobenzene in the raw material, i.e., when below de minimis levels, when making threshold determinations. The facility does not have to report emissions of chlorobenzene from storage tanks or any other equipment where the chlorobenzene content is less than 1 percent.

#### *Example of Fluctuating Process Concentration*

A manufacturer produces an ink product which contains toluene, a listed toxic chemical below the de minimis level. The process used causes the percentage of toluene in the mixture to fluctuate: it rises above the de minimis level for a time but drops below the level as the process winds down. The facility must consider the chemical toward threshold determinations from the point at which it first exceeds the de minimis limit. Once the de minimis limit has been crossed the exemption cannot be taken.

#### *Example of Concentration Levels that Straddle the De Minimis Level*

A facility processes 9,500,000 lbs. of mixtures containing 0.25-1.2% manganese. Manganese is subject to 1% de minimis concentration exemption. The amount of mixture subject to reporting is:

$$9,500,000 \times (1.2 - 0.99) / (1.2 - 0.25) = 2,000,000 \text{ lbs. non-exempt mixture}$$

The average concentration above de minimis is 1.1%.  
 $2,000,000 \times 0.011 \text{ manganese} = 22,000 \text{ lbs manganese}$   
 (below threshold)

In this example, because the facility's information pertaining to the toxic chemical is available to two significant figures, the facility used 0.99 to determine the amount of the toxic chemical below the de minimis level. If the facility has information pertaining to the chemical that is available only to one significant figure, the facility should use 0.9.

#### *De Minimis Application in the Manufacture of the Listed Chemical in a Mixture*

The de minimis exemption generally does not apply to the manufacturing of a toxic chemical. The de minimis exemption may apply to mixtures and trade name products containing toxic chemicals that are imported into the United States. Another exception applies to toxic chemicals that are coincidentally manufactured as impurities that remain in the product distributed in commerce at below the de minimis levels. The amount remaining in the product is exempt from threshold determinations. If the chemical is separated from the final product, thereby classifying the chemical as a byproduct, it cannot qualify for the exemption. Any amount that is separated, or is separate, from the product, is considered a byproduct and is subject to threshold determinations and release and other waste management estimates. Any amount of a toxic chemical that is manufactured in a wastestream must be accounted for on Form R.

#### *Example of Coincidental Manufacture as a Product Impurity*

Toluene 2,4-diisocyanate reacts with water to form trace quantities of 2,4-diaminotoluene. The resulting product contains 99 percent toluene 2,4-diisocyanate and 0.05 percent 2,4-diaminotoluene. The 2,4-diaminotoluene would not be subject to Section 313 reporting nor would supplier notification be required because the concentration of 2,4-diaminotoluene is below its de minimis concentration of 0.1 percent in the product. Coincidental manufacture/production refers only to production of a chemical via a chemical reaction. It would not include separation of a byproduct from a purchased mixture during a processing operation.

#### *Example of Coincidental Manufacture as a Commercial Byproduct and Impurity*

Chloroform is a reaction byproduct in the production of carbon tetrachloride. It is removed by distillation to a concentration of less than 150 ppm (0.0150%) remaining in the carbon tetrachloride. The separated chloroform at

Figure 2

# OPTIONAL SECTION 313 REPORTING THRESHOLD WORKSHEET

Facility Name: \_\_\_\_\_ Date Worksheet Prepared: \_\_\_\_\_  
 Toxic Chemical or Chemical Category: \_\_\_\_\_ Prepared By: \_\_\_\_\_  
 Reporting Year: \_\_\_\_\_

Step 1. Identify amounts of the toxic chemical manufactured, processed, or otherwise used.

| Mixture Name or Other Identifier | Information Source | Percent by Weight | Total Weight (in lbs) | Amount of the Listed Toxic Chemical by Activity (in lbs.): |                |                |
|----------------------------------|--------------------|-------------------|-----------------------|------------------------------------------------------------|----------------|----------------|
|                                  |                    |                   |                       | Manufactured                                               | Processed      | Otherwise Used |
| 1.                               |                    |                   |                       |                                                            |                |                |
| 2.                               |                    |                   |                       |                                                            |                |                |
| 3.                               |                    |                   |                       |                                                            |                |                |
| 4.                               |                    |                   |                       |                                                            |                |                |
| 5.                               |                    |                   |                       |                                                            |                |                |
| 6.                               |                    |                   |                       |                                                            |                |                |
| 7.                               |                    |                   |                       |                                                            |                |                |
| Subtotal:                        |                    |                   |                       | (A) _____ lbs.                                             | (B) _____ lbs. | (C) _____ lbs. |

Step 2. Identify exempt forms of the toxic chemical that have been included in Step 1.

| Mixture Name as Listed Above | Applicable Exemption | Note Fraction or Percent Exempt (if Applicable) | Exempt Amount of the Toxic Chemical from Above (in lbs.): |                              |                              |
|------------------------------|----------------------|-------------------------------------------------|-----------------------------------------------------------|------------------------------|------------------------------|
|                              |                      |                                                 | Manufactured                                              | Processed                    | Otherwise Used               |
| 1.                           |                      |                                                 |                                                           |                              |                              |
| 2.                           |                      |                                                 |                                                           |                              |                              |
| 3.                           |                      |                                                 |                                                           |                              |                              |
| 4.                           |                      |                                                 |                                                           |                              |                              |
| 5.                           |                      |                                                 |                                                           |                              |                              |
| 6.                           |                      |                                                 |                                                           |                              |                              |
| 7.                           |                      |                                                 |                                                           |                              |                              |
| Subtotal:                    |                      |                                                 | (A <sub>1</sub> ) _____ lbs.                              | (B <sub>1</sub> ) _____ lbs. | (C <sub>1</sub> ) _____ lbs. |

Step 3. Calculate the amount subject to threshold:

Compare to thresholds for section 313 reporting.

(A - A<sub>1</sub>) \_\_\_\_\_ lbs. (B - B<sub>1</sub>) \_\_\_\_\_ lbs. (C - C<sub>1</sub>) \_\_\_\_\_ lbs.

25,000 lbs. 25,000 lbs. 10,000 lbs.

90 percent concentration is sold as a byproduct. Chloroform is subject to a 0.1% (1000 ppm) de minimis level. Any amount of chloroform manufactured and separated as byproduct must be included in threshold determinations because the de minimis exemption does not apply to manufacture of a chemical. Releases of chloroform prior to and during purification of the carbon tetrachloride should be reported. The de minimis level can, however, be applied to the chloroform remaining in the carbon tetrachloride as an impurity. Because the concentration of chloroform remaining in the carbon tetrachloride is below the de minimis level, this quantity of chloroform is exempt from threshold determinations, release and other waste management reporting, and supplier notification.

#### *Example of Coincidental Manufacture as a Waste Byproduct*

A small amount of formaldehyde is manufactured as a reaction byproduct during the production of phthalic anhydride. The formaldehyde is separated from the phthalic anhydride as a waste gas and burned, leaving no formaldehyde in the phthalic anhydride. The amount of formaldehyde produced and removed as waste must be included in threshold determinations and release and other waste management estimates even if the formaldehyde were present below the de minimis level in the process stream where it was manufactured or in the wastestream to which it was separated.

The de minimis exemption also does not apply to situations where the manufactured chemical is released or transferred to wastestreams and thereby diluted to below the de minimis level.

### Laboratory Exemption

**Laboratory Activities:** Listed toxic chemicals that are manufactured, processed, or otherwise used in laboratory activities at a covered facility under the direct supervision of a technically qualified individual do not have to be considered for threshold and release calculations. However, pilot plant scale and specialty chemical production do not qualify for this laboratory activities exemption.

## B.4 Threshold Determination

Section 313 reporting is required if threshold quantities are exceeded. Separate thresholds apply to the amount of the toxic chemical that is manufactured, processed, or otherwise used.

You must submit a report for any listed toxic chemical that is manufactured or processed at your facility in excess of the following threshold:

- ☐ 25,000 pounds during the course of a calendar year.

You must submit a report if the quantity of a listed toxic chemical that is otherwise used at your facility exceeds:

- ☐ 10,000 pounds during the course of a calendar year.

### B.4.a How to Determine If Your Facility Has Exceeded Thresholds

To determine whether your facility has exceeded a section 313 reporting threshold, compare quantities of listed toxic chemicals that you manufacture, process, or otherwise use to the respective thresholds for those activities. A worksheet is provided in Figure 2 to assist facilities in determining whether they exceed any of the reporting thresholds. This worksheet also provides a format for maintaining reporting facility records. Use of this worksheet is not required and the completed worksheet(s) should not accompany Form R reports submitted to EPA and the State.

Complete a separate worksheet for each section 313 toxic chemical or chemical category. Base your threshold determination for listed toxic chemicals with qualifiers only on the quantity of the toxic chemical satisfying the qualifier.

Use of the worksheet is divided into three steps:

Step 1 allows you to record the gross amount of the toxic chemical or chemical category involved in activities throughout the facility. Pure forms as well as the amounts of the toxic chemical or chemical category present in mixtures or trade name products must be considered. The types of activity (i.e., manufacturing, processing, or otherwise using) for which the toxic chemical is used must be identified because separate thresholds apply to each of these activities. A record of the information source(s) used should be kept. Possible information sources include purchase records, inventory data, and calculations by a process engineer. The data collected in Step 1 will be totaled for each activity to identify the overall amount of the toxic chemical or chemical category manufactured (including imported), processed, or otherwise used.

Step 2 allows you to identify uses of the toxic chemical or chemical category that were included in Step 1 but are exempt under section 313. Do not include in Step 2 exempt forms of the toxic chemical not included in the calculations in Step 1. For example, if freon contained in the building's air conditioners was not reported in Step 1, you would not include the amount as exempt in Step 2.

Step 2 is intended for use when one form or use of the toxic chemical is exempt while other forms require reporting. Note the type of exemption for future reference. Also identify, if applicable, the fraction or percentage of the toxic chemical present that is exempt. Add the amounts in each activity to obtain a subtotal for exempted amounts of the toxic chemical or chemical categories at the facility.

Step 3 involves subtracting the result of Step 2 from the results of Step 1 for each activity. Compare this net sum to the applicable activity threshold. If the threshold is met or exceeded for any of the three activities, a facility must submit a Form R for that toxic chemical or chemical category. This worksheet should be retained in either case to document your determination for reporting or not reporting, but should not be submitted with the report. Do not sum quantities of the toxic chemical that are manufactured, processed, and otherwise used at your facility, because each of these activities requires a separate threshold determination. For example, if in a calendar year you processed 20,000 pounds of a chemical and you otherwise used 6,000 pounds of that same toxic chemical, your facility has not met or exceeded any applicable threshold and thus is not required to report for that chemical.

You must submit a report if you exceed any threshold for any listed toxic chemical or chemical category. For example, if your facility processes 22,000 pounds of a listed toxic chemical and also otherwise uses 16,000 pounds of that same toxic chemical, it has exceeded the otherwise use threshold (10,000 pounds) and your facility must report even though it did not exceed the process threshold. However, in preparing your reports, you must consider all non-exempted activities and all releases of the toxic chemical from your facility, not just releases from the otherwise use activity.

Also note that threshold determinations are based upon the actual amounts of a toxic chemical manufactured, processed, or otherwise used over the course of the calendar year. The threshold determination may not relate to the amount of a toxic chemical brought on-site during the calendar year. For example, if a stockpile of 100,000 pounds of a toxic chemical is present on-site but only 20,000 pounds is applied to a process, only the 20,000 pounds processed is counted toward a threshold determination, not the entire 100,000 pounds of the stockpile.

### **Threshold Determinations for On-Site Reuse Operations.**

Threshold determinations of listed toxic chemicals that are reused at the facility are based only on the amount of the toxic chemical that is added during the year, not the total volume in the system. For example, a facility oper-

ates a refrigeration unit that contains 15,000 pounds of anhydrous ammonia at the beginning of the year. The system is charged with 2,000 pounds of anhydrous ammonia during the year. The facility has therefore "otherwise used" only 2,000 pounds of the covered toxic chemical and is not required to report (unless there are other "otherwise use" activities of ammonia which, when taken together, exceed the reporting threshold). If, however, the whole refrigeration unit was recharged with 15,000 pounds of anhydrous ammonia during the year, the facility would exceed the otherwise use threshold, and be required to report.

This does not apply to toxic chemicals "recycled" off-site and returned to a facility. Such toxic chemicals returned to a facility are treated as the equivalent of newly purchased material for purposes of section 313 threshold determinations.

### **Threshold Determinations for Ammonia.**

The listing for ammonia now includes the modifier "includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing". The qualifier for ammonia means that anhydrous forms of ammonia are 100 percent reportable and aqueous forms are limited to 10 percent of total aqueous ammonia. Therefore, when determining threshold quantities, 100 percent of anhydrous ammonia is included but only 10 percent of total aqueous ammonia is included. If any ammonia evaporates from aqueous ammonia solutions, 100 percent of the evaporated ammonia is included in threshold determinations.

For example, if a facility processes aqueous ammonia it has processed 100 percent of the aqueous ammonia in that solution. If the ammonia remains in solution, then 10% of the total aqueous ammonia is counted towards threshold. If there are any evaporative losses of anhydrous ammonia, then 100 percent of those losses must be counted towards the processing threshold. If the manufacturing, processing, or otherwise use threshold for the ammonia listing are exceeded, the facility must report 100 percent of these evaporative losses in Sections 5 and 8 of the Form R.

### **Threshold Determinations for Chemical Categories.**

A number of chemical compound categories are subject to reporting. See Table II for a listing of these toxic chemical categories. When reporting for one of these toxic chemical categories, all individual members of a category that are manufactured, processed, or otherwise used must be counted. However, threshold determinations must be made separately for each of the three activities. Do not

**Example 5: Mixture and Trade Name Products**

**Scenario #1:** Your facility uses 12,000 pounds of an industrial solvent (Solvent X) for equipment cleaning. The Material Safety Data Sheet (MSDS) for the solvent indicates that it contains at least 50 percent methyl ethyl ketone (MEK), a listed toxic chemical; however, it also states that the solvent contains 20 percent non-hazardous surfactants. This is the only MEK-containing chemical used at the facility.

Follow these steps to determine if the quantity of the toxic chemical in solvent X exceeds the threshold for otherwise use.

- 1) Determine a reasonable maximum concentration for the toxic chemical by subtracting out the non-hazardous surfactants (i.e.,  $100\% - 20\% = 80\%$ ).
- 2) Determine the midpoint between the known minimum (50%) and the reasonable maximum calculated above (i.e.,  $(80\% - 50\%) / 2 + 50\% = 65\%$ ).
- 3) Multiply total weight of Solvent X otherwise used by 65 percent (0.65).  
 $12,000 \text{ pounds} \times 0.65 = 7,800 \text{ pounds}$
- 4) Because the total amount of MEK otherwise used at the facility was less than the 10,000 pound otherwise use threshold, the facility is not required to file a Form R for MEK.

**Scenario #2:** Your facility otherwise used 15,000 pounds of Solvent Y to clean printed circuit boards. The MSDS for the solvent lists only that Solvent Y contains at least 80 percent of a listed toxic chemical which is only identified as chlorinated hydrocarbons.

Follow these steps to determine if the quantity of the toxic chemical in solvent exceeds the threshold for otherwise use.

- 1) Because the specific chemical is unknown, the Form R will be filed for "chlorinated hydrocarbons." This name will be entered into Part II, Section 2.1, "Mixture Component Identity." (Note: Because your supplier is claiming the toxic chemical identity a trade secret, you do not have to file substantiation forms.)
- 2) The upper bound limit is assumed to be 100 percent and the lower bound limit is known to be 80 percent. Using this information, the specific concentration is estimated to be 90 percent (i.e., the mid-point between upper and lower limits).  
 $(100\% + 80\%) / 2 = 90\%$
- 3) The total weight of Solvent Y is multiplied by 90 percent (0.90) when calculating for thresholds.  
 $15,000 \times 0.90 = 13,500$
- 4) Because the total amount of chlorinated hydrocarbons exceeds the 10,000 pound otherwise used threshold, you must file a Form R for this chemical.

include in these threshold determinations for a category any chemicals that are also specifically listed section 313 toxic chemicals (see Table II) or specific toxic chemicals that have been deleted from the category (e.g., a class of copper phthalocyanine compounds has been deleted from the copper compounds category). Specifically listed toxic chemicals are subject to their own, individual threshold determination.

Threshold determinations for metal-containing compounds present a special case. If, for example, your facility processes several different lead compounds, base your threshold determination on the total weight of all lead compounds processed. However, if your facility processes both the "parent" metal (lead) as well as one or more lead compounds, you must make threshold determinations for both because they are separately listed toxic chemicals. If your facility exceeds thresholds for both the parent metal and compounds of that same metal, EPA allows you to file one combined report (e.g., one report for lead compounds, including lead) because the release information you will report in connection with metal compounds will be the total pounds of the parent metal released. If you file one combined report, you must put either the name of the metal or the name of the metal compound category on the Form R. Do not put both names on the Form R.

The case of metal compounds involving more than one metal should be noted. Some metal compounds may contain more than one listed metal. For example, lead chromate is both a lead compound and a chromium compound. In such cases, if applicable thresholds are exceeded, you are required to file two separate reports, one for lead compounds and one for chromium compounds. Apply the total weight of the lead chromate to the threshold determinations for both lead compounds and chromium compounds. However, only the amount of each parent metal released (not the amount of the compound) would be reported on the appropriate sections of both Form Rs.

**Nitrate Compounds (water dissociable; reportable only when in aqueous solution).** For the category nitrate compounds (water dissociable; reportable only when in aqueous solution), the entire weight of the nitrate compound is counted towards the threshold. A nitrate compound is covered by this listing only when in water and only if dissociated. If no information is available on the identity of the type of nitrate that is manufactured processed or otherwise used, assume that the nitrate compound exists as sodium nitrate.

## B.4.b Mixtures and Trade Name Products

Toxic chemicals contained in mixtures and trade name products must be factored into threshold determinations and release and other waste management determinations.

If your facility processed or otherwise used mixtures or trade name products during the calendar year, you are required to use the best information available to determine whether the components of a mixture are above the de minimis concentration and, therefore, must be included in threshold and release determinations. If you know that a mixture or trade name product contains a specific toxic chemical, combine the amount of the toxic chemical in the mixture or trade name product with other amounts of the same toxic chemical processed or otherwise used at your facility for threshold and release determinations. If you know that a mixture contains a toxic chemical but no concentration information is provided by the supplier, you do not have to consider the amount of the toxic chemical present in that mixture for purposes of threshold and release determinations.

Observe the following guidelines in estimating concentrations of toxic chemicals in mixtures when only limited information is available:

- ☐ If you know the lower and upper bound concentrations of a toxic chemical in a mixture, use the midpoint of these two concentrations for threshold determinations.
- ☐ If you know only the lower bound concentration, you should subtract out the percentages of any other known components to determine a reasonable upper bound concentration, and then determine a midpoint.
- ☐ If you have no information other than the lower bound concentration, calculate a midpoint assuming an upper bound concentration of 100 percent.
- ☐ If you only know the upper bound concentration, you must use it for threshold determinations.
- ☐ In cases where you only have a concentration range available, you should use the midpoint of the range extremes.

**B.5 Release and Other Waste Management Determinations for Metals, Metal Compounds, and Nitrate Compounds (water dissociable; reportable only when in aqueous solution)**

**Metal Compounds.** Although the complete weight of the metal compound must be used for threshold determinations for the metal compound categories, for release and other waste management determinations, only the parent metal portion of the metal compound must be considered. Remember that for metal compounds that consist of more than one metal, release and other waste management reporting must be made for each metal, provided that the appropriate thresholds have been exceeded.

**Metals and Metal Compounds.** As stated above, for metal compounds only the metal portion of the metal compound should be considered in determining release and other waste management quantities for the metal compound categories. Therefore, if thresholds are separately exceeded for the "parent" metal and its compounds, EPA allows you to file a combined Form R for the "parent" metal and its compounds. This Form R would contain all of the release and other waste management information for both the "parent" metal and metal portion of the related metal compounds. For example, you exceed thresholds for chromium. You also exceed thresholds for chromium compounds. Instead of filing two Form Rs you can file one combined Form R. This Form R would contain information on quantities of chromium released or otherwise managed as waste and the quantities of the chromium portion of the chromium compounds released or otherwise managed as waste. Note that this does not apply to the Form A. See the section in these instructions on the Form A.

**Nitrate Compounds (water dissociable; reportable only in aqueous solution).** Although the complete weight of the nitrate compound must be used for threshold determinations for the nitrate compounds category, for release and other waste management determinations only the nitrate portion of the compound must be considered.

## C. Instructions for Completing EPA Form R

### Part I. Facility Identification Information

#### Section 1. Reporting Year

This is the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 1997 reporting year must be submitted on or before July 1, 1998.

#### Section 2. Trade Secret Information

##### 2.1 Are you claiming the chemical identity on page 1 trade secret?

Answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part II, Section 1, may be designated as a trade secret. If you are making a trade secret claim, mark "yes" and proceed to Section 2.2. Only check "yes" if it is you manufacture, process, or otherwise use of the toxic chemical whose identity is a trade secret. (See page 1 of these instructions for specific information on trade secrecy claims.) If you checked "no," proceed to Section 3; do not answer Section 2.2.

##### 2.2 If "yes" in 2.1, is this copy sanitized or unsanitized?

Answer this question only after you have completed the rest of the report. Check "sanitized" if this copy of the report is the public version which does not contain the toxic chemical identity but does contain a generic name in its place, and you have claimed the toxic chemical identity trade secret in Part I, Section 2.1. Otherwise, check "unsanitized."

#### Section 3. Certification

The certification statement must be signed by the owner or operator or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type in the space provided the name and title of the person who signs the statement. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

### Section 4. Facility Identification

#### 4.1 Facility Name, Location, and TRI Facility Identification Number

Enter the name of your facility (plant site name or appropriate facility designation), street address, mailing address, city, county, state, and zip code in the space provided. Do not use a post office box number as the street address. The street address provided should be the location where the toxic chemicals are manufactured, processed, or otherwise used. If your mailing address and street address are the same, enter NA in the space for the mailing address.

If you have submitted a Form R for previous reporting years, a TRI Facility Identification Number has been assigned to your facility. The TRI Facility Identification Number appears (with other facility-specific information) on a pre-printed page 1 of the Form R that is attached to the cover of this Toxic Chemical Release Inventory Instructions for 1997. Please do not destroy this page 1. When completing your Form R reports for 1997, you may use this pre-printed page 1 instead of filling out a new page one.

If your pre-printed page 1 is missing information required on Form R, insert that information in the appropriate box in Part I, Section 4.1. For example, if your pre-printed page 1 contains your street address and not your mailing address, enter your mailing address in the space provided.

If you do not have a pre-printed page 1, but know your TRI Facility Identification Number, complete Section 4. If you do not know your TRI Facility Identification Number, contact the EPCRA Hotline (see page 4). If your facility has moved do not enter your TRI facility identification number, enter "New Facility."

Enter "NA" in the space for the TRI Facility Identification number if this is your first submission of a Form R.

#### 4.2 Full or Partial Facility Indication

A covered facility must report all releases and other waste management activities and source reduction activities of a listed toxic chemical if it meets a reporting threshold for that toxic chemical. However, if the facility is composed of several distinct establishments, EPA allows these establishments to submit separate reports for the toxic chemical as long as all releases and other waste management activities of the toxic chemical from the entire facility are accounted for. Indicate in Section 4.2 whether your report is for the entire covered facility as a whole or for part of a covered facility.

Section 313 requires reports by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person."

The SIC code system defines business "establishments" as "distinct and separate economic activities [that] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may submit a separate Form R for each establishment, or for groups of establishments in your facility, provided all releases and other waste management activities and source reduction activities involving the toxic chemical from the entire facility are reported. This allows you the option of reporting separately on the activities involving a toxic chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that toxic chemical for the entire facility. However, if an establishment or group of establishments does not manufacture, process, or otherwise use or release or otherwise manage as waste a toxic chemical, you do not have to submit a report for that establishment or group of establishments. (See also Section B.2a of these instructions.)

### 4.3 Technical Contact

Enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on Form R. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility; however, this person must be familiar with the details of the report so that he or she can answer questions about the information provided.

### 4.4 Public Contact

Enter the name and telephone number (including area code) of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, you may enter "Same as Section 4.3" in this space. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility. If this space is left blank, the technical contact will be listed as the public contact in the TRI database.

## 4.5 Standard Industrial Classification (SIC) Code

Enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility. Table I lists the SIC codes within the 20-39 range. If the report covers more than one establishment, enter the primary 4-digit SIC code for each establishment starting with the primary SIC code for the entire facility. You are required to enter SIC codes only for those establishments within the facilities that fall within SIC codes 20 to 39. If you do not know your SIC code, consult the 1987 SIC Manual (see pg. 5).

The North American Industry Classification System (NAICS), is a new economic classification system that will replace the 1987 SIC code system. EPA will address the SIC code change, as it relates to EPCRA, in an upcoming Federal Register notice. This upcoming change does NOT affect the 1997 EPCRA section 313 reporting.

## 4.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. Instructions on how to determine these coordinates can be found in Appendix E. Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere.

Latitude and longitude coordinates of your facility are very important for pinpointing the location of reporting facilities and are required elements on the Form R. EPA encourages facilities to make the best possible measurements when determining latitude and longitude. As with any other data field, missing, suspect, or incorrect data may generate a Notice of Technical Error to be issued to the facility. (See Appendix C: Common Errors in Completing Form R Reports).

## 4.7 Dun and Bradstreet Number

Enter the 9-digit number assigned by Dun and Bradstreet (D & B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from your local Dun and Bradstreet office (check the telephone book White Pages). If a facility does not subscribe to the D & B service, a "support number" can be obtained from the Dun & Bradstreet center located in Allentown, Pennsylvania, at (610) 882-7748 (8:30 am to 8:00 pm, Eastern Time). If none of your establishments has been assigned a D & B number, enter not applicable, NA, in box (a). If only some of your establishments have been assigned Dun and Bradstreet numbers, enter those numbers in Part I, section 4.7.

## 4.8 EPA Identification Number

The EPA I.D. Number is a 12-character number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned I.D. Number. If your facility is not required to have an I.D. Number, enter not applicable, NA, in box (a). If your facility has been assigned EPA Identification Numbers, you must enter those numbers in the spaces provided in Section 4.8.

## 4.9 NPDES Permit Number

Enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES) even if the permit(s) do not pertain to the toxic chemical being reported. This 9-character permit number is assigned to your facility by EPA or the State under the authority of the Clean Water Act. If your facility does not have a permit, enter not applicable, NA, in Section 4.9a.

## 4.10 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject a waste containing the toxic chemical into Class 1 deep wells, enter the 12-digit Underground Injection Well Code (UIC) identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit(s), enter not applicable, NA, in Section 4.10a. You are only required to provide the UIC number for wells that receive the toxic chemical being reported.

## Section 5. Parent Company Information

You must provide information on your parent company. For purposes of Form R, a parent company is defined as the highest level company, located in the United States, that directly owns at least 50 percent of the voting stock of your company. If your facility is owned by a foreign entity, enter not applicable, NA, in this space. Corporate names should be treated as parent company names for companies with multiple facility sites. For example, the Bestchem Corporation is not owned or controlled by any other corporation but has sites throughout the country whose names begin with Bestchem. In this case, Bestchem Corporation would be listed as the parent company. Note that a facility that is a 50:50 joint venture is its own parent company.

## 5.1 Name of Parent Company

Enter the name of the corporation or other business entity that is your ultimate US parent company. If your facility has no parent company, check the NA box.

## 5.2 Parent Company's Dun & Bradstreet Number

Enter the Dun and Bradstreet Number for your ultimate US parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, check the NA box.

## Part II. Chemical Specific Information

In Part II, you are to report on:

- ☐ The toxic chemical being reported;
- ☐ The general uses and activities involving the toxic chemical at your facility;
- ☐ Releases of the toxic chemical from the facility to air, water, and land;
- ☐ Quantities of the toxic chemical transferred to off-site locations;
- ☐ Information for on-site and off-site waste treatment, energy recovery, disposal, and recycling of the toxic chemical; and
- ☐ Source reduction activities.

## Section 1. Toxic Chemical Identity

### 1.1 CAS Number

Enter the Chemical Abstracts Service (CAS) registry number in Section 1.1 **exactly** as it appears in Table II for the chemical being reported. CAS numbers are cross-referenced with an alphabetical list of chemical names in Table II of these instructions. If you are reporting one of the toxic chemical categories in Table II (e.g., chromium compounds), enter the applicable category code in the CAS number space. Toxic chemical category codes are listed below and can also be found in Table II.

#### Toxic Chemical Category Codes

|      |                     |
|------|---------------------|
| N010 | Antimony compounds  |
| N020 | Arsenic compounds   |
| N040 | Barium compounds    |
| N050 | Beryllium compounds |
| N078 | Cadmium compounds   |
| N084 | Chlorophenols       |
| N090 | Chromium compounds  |

|      |                                                              |
|------|--------------------------------------------------------------|
| N096 | Cobalt compounds                                             |
| N100 | Copper compounds                                             |
| N106 | Cyanide compounds                                            |
| N120 | Diisocyanates                                                |
| N171 | Ethylenebisdithiocarbamic acid,<br>salts and esters, (EBDCs) |
| N230 | Certain Glycol ethers                                        |
| N420 | Lead compounds                                               |
| N450 | Manganese compounds                                          |
| N458 | Mercury compounds                                            |
| N495 | Nickel compounds                                             |
| N503 | Nicotine and salts                                           |
| N511 | Nitrate compounds                                            |
| N575 | Polybrominated biphenyls (PBBs)                              |
| N583 | Polychlorinated alkanes                                      |
| N590 | Polycyclic aromatic compounds                                |
| N725 | Selenium compounds                                           |
| N740 | Silver compounds                                             |
| N746 | Strychnine and salts                                         |
| N760 | Thallium compounds                                           |
| N874 | Warfarin and Salts                                           |
| N982 | Zinc compounds                                               |

If you are making a trade secret claim, you must report the CAS number or category code on your unsanitized Form R and unsanitized substantiation form. Do not include the CAS number or category code on your sanitized Form R or sanitized substantiation form.

## 1.2 Toxic Chemical or Chemical Category Name

Enter the name of the toxic chemical or chemical category exactly as it appears in Table II. If the toxic chemical name is followed by a synonym in parentheses, report the chemical by the name that directly follows the CAS number (i.e., not the synonym). If the listed toxic chemical identity is actually a product trade name (e.g., dicofol), the 9th *Collective Index* name is listed below it in brackets. You may report either name in this case.

**Do not** list the name of a chemical that does not appear in Table II, such as individual members of a reportable toxic chemical category. For example, if you use silver nitrate, **do not** report silver nitrate with its CAS number. Report this chemical as "silver compounds" with its category code, N740.

If you are making a trade secret claim, you must report the specific toxic chemical identity on your unsanitized Form R and unsanitized substantiation form. Do not report the name of the toxic chemical on your sanitized Form R or sanitized substantiation form. Include a generic name in Part II, Section 1.3 of your sanitized Form R report.

### Example 6: Mixture Containing Unidentified Toxic Chemical

Your facility uses 20,000 pounds of a solvent that your supplier has told you contains 80 percent "chlorinated aromatic," their generic name for a toxic chemical subject to reporting under section 313. You therefore know that you have used 16,000 pounds of some listed toxic chemical which exceeds the "otherwise use" threshold. You would file a Form R and enter the name "chlorinated aromatic" in the space provided in Part II, Section 2.

EPA requests that the toxic chemical, chemical category, or generic name also be placed in the box marked "Chemical, Category, or Generic Name" in the upper right-hand corner on all pages of Form R. While this space is not a required data element, providing this information will help you in preparing a complete Form R report.

## 1.3 Generic Chemical Name

Complete Section 1.3 only if you are claiming the specific toxic chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in Part I, Section 2.1 on page 1 of Form R. Enter a generic chemical name that is descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less. Do not enter mixture names in Section 1.3; see Section 2 below.

In-house plant codes and other substitute names that are not structurally descriptive of the toxic chemical identity being withheld as a trade secret are not acceptable as a generic name. The generic name must appear on both sanitized and unsanitized Form R's, and the name must be the same as that used on your substantiation forms.

## Section 2. Mixture Component Identity

Do not complete this section if you have completed Section 1 of Part II. Report the generic name provided to you by your supplier in this section if your supplier is claiming the chemical identity proprietary or trade secret. Do not answer "yes" in Part I, Section 2.1 on page 1 of the form if you complete this section. You do not need to supply trade secret substantiation forms for this toxic chemical because it is your supplier who is claiming the chemical identity a trade secret.

## 2.1 Generic Chemical Name Provided by Supplier

Enter the generic chemical name in this section only if the following three conditions apply:

1. You determine that the mixture contains a listed toxic chemical but the only identity you have for that chemical is a generic name;
2. You know either the specific concentration of that toxic chemical component or a maximum or average concentration level; and
3. You multiply the concentration level by the total annual amount of the whole mixture processed or otherwise used and determine that you meet the process or otherwise use threshold for that single, generically identified mixture component.

## Section 3. Activities and Uses of the Toxic Chemical at the Facility

Indicate whether the toxic chemical is manufactured (including imported), processed, or otherwise used at the facility and the general nature of such activities and uses at the facility during the calendar year (see example 7, pg. 23, and figure 3, pg. 24). You are not required to report on Form R the quantity manufactured, processed or otherwise used. Report activities that take place only at your facility, not activities that take place at other facilities involving your products. You must check all the boxes in this section that apply. If you are a manufacturer of the toxic chemical, you must check (a) and/or (b), and at least one of (c), (d), (e), or (f) in Section 3.1. Refer to the definitions of "manufacture," "process," and "otherwise use" in the general information section of these instructions or Part 40, Section 372.3 of the *Code of Federal Regulations* for additional explanations.

### 3.1 Manufacture the Toxic Chemical

Persons who manufacture (including import) the toxic chemical must check at least one of the following:

- a. *Produce* - the toxic chemical is produced at the facility.
- b. *Import* - the toxic chemical is imported by the facility into the Customs Territory of the United States. (See Section B.3.a of these instructions for further clarification of import.)

And check at least one of the following:

- c. *For on-site use/processing* - the toxic chemical is produced or imported and then further processed or otherwise used at the same facility. If you check this block, you must also check at least one item in Part II, Section 3.2 or 3.3.
- d. *For sale/distribution* - the toxic chemical is produced or imported specifically for sale or distribution outside the manufacturing facility.
- e. *As a byproduct* - the toxic chemical is produced coincidentally during the manufacture, processing, otherwise use, or disposal of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. Toxic chemicals produced as a result of waste management are also considered byproducts.
- f. *As an impurity* - the toxic chemical is produced coincidentally as a result of the manufacture, processing, or otherwise use of another chemical but is not separated and remains primarily in the mixture or product with that other chemical.

### 3.2 Process the Toxic Chemical (incorporative activities)

- a. *As a reactant* - A natural or synthetic toxic chemical used in chemical reactions for the manufacture of another chemical substance or of a product. Includes, but is not limited to, feedstocks, raw materials, intermediates, and initiators.
- b. *As a formulation component* - A toxic chemical added to a product (or product mixture) prior to further distribution of the product that acts as a performance enhancer during use of the product. Examples of toxic chemicals used in this capacity include, but are not limited to, additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants, and rheological modifiers.
- c. *As an article component* - A toxic chemical that becomes an integral component of an article distributed for industrial, trade, or consumer use. One example is the pigment components of paint applied to a chair that is sold.
- d. *Repackaging* - Processing or preparation of a toxic chemical (or product mixture) for distribution in commerce in a different form, state, or quantity.

This includes, but is not limited to, the transfer of material from a bulk container, such as a tank truck to smaller containers such as cans or bottles.

### 3.3 Otherwise Use the Toxic Chemical (non-incorporative activities)

- a. *As a chemical processing aid* - A toxic chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture. Examples of such toxic chemicals include, but are not limited to, process solvents, catalysts, inhibitors, initiators, reaction terminators, and solution buffers.
- b. *As a manufacturing aid* - A toxic chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance. Examples include, but are not limited to, process lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.
- c. *Ancillary or other use* - A toxic chemical that is used at a facility for purposes other than aiding chemical processing or manufacturing as described above. Examples include, but are not limited to, cleaners, degreasers, lubricants, fuels, toxic chemicals used for treating wastes, and toxic chemicals used to treat water at the facility.

## Section 4. Maximum Amount of the Toxic Chemical On-Site at Any Time During the Calendar Year

For data element 4.1 of Part II, insert the code (see codes below) that indicates the maximum quantity of the toxic chemical (e.g., in storage tanks, process vessels, on-site shipping containers or in waste) at your facility at any time during the calendar year. If the toxic chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time.

### Weight Range in Pounds

| Range Code | From...     | To....              |
|------------|-------------|---------------------|
| 01         | 0           | 99                  |
| 02         | 100         | 999                 |
| 03         | 1,000       | 9,999               |
| 04         | 10,000      | 99,999              |
| 05         | 100,000     | 999,999             |
| 06         | 1,000,000   | 9,999,999           |
| 07         | 10,000,000  | 49,999,999          |
| 08         | 50,000,000  | 99,999,999          |
| 09         | 100,000,000 | 499,999,999         |
| 10         | 500,000,000 | 999,999,999         |
| 11         | 1 billion   | more than 1 billion |

If the toxic chemical present at your facility was part of a mixture or trade name product, determine the maximum quantity of the toxic chemical present at the facility by calculating the weight percent of the toxic chemical only.

Do not include the weight of the entire mixture or trade name product. This data may be found in the Tier II form your facility may have prepared under Section 312 of

### Example 7: Activities and Uses of Toxic Chemicals

In the example below, it is assumed that the threshold quantities for manufacture, process, or otherwise use (25,000 pounds, 25,000 pounds, and 10,000 pounds, respectively) have been exceeded and the reporting of listed toxic chemicals is therefore required.

Your facility manufactures diazomethane. Fifty percent is sold as a product. The remaining 50 percent is reacted with alpha-naphthylamine, forming N-methyl-alpha-naphthylamine and also producing nitrogen gas.

- ☐ Your company manufactures diazomethane, a listed toxic chemical, both for sale/distribution as a commercial product and for on-site use/processing as a feedstock in the N-methyl-alpha-naphthylamine production process. Because the diazomethane is a reactant, it is also processed. See Figure 3 for how this information would be reported in Part II, Section 3 of Form R.
- ☐ Your facility also processes alpha-naphthylamine, as a reactant to produce N-methyl-alpha-naphthylamine, a chemical not on the section 313 list.

Figure 3

| SECTION 1. TOXIC CHEMICAL IDENTITY |                                                                                                                                                                    | (Important: DO NOT complete this sections if you complete Section 2 below.) |  |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--|
| 1.1                                | CAS Number (Important: Enter only one number exactly as it appears on the Section 313 list. Enter category code if reporting a chemical category.)<br><br>334-88-3 |                                                                             |  |
| 1.2                                | Toxic Chemical or Chemical category Name (Important: Enter only one name exactly as it appears on the Section 313 list.)<br><br>Diazomethane                       |                                                                             |  |
| 1.3                                | Generic Chemical Name (Important: Complete only if Part 1, Section 2.1 is checked "yes". Generic Name must be structurally descriptive.)<br><br>                   |                                                                             |  |

| SECTION 2. MIXTURE COMPONENT IDENTITY |                                                                                                                                               | (Important: DO NOT complete this section if you complete Section 1 above.) |  |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--|
| 2.1                                   | Generic Chemical Name Provided by Supplier (Important: Maximum of 70 Characters, Including Numbers, letters, spaces, and punctuation)<br><br> |                                                                            |  |

| SECTION 3. ACTIVITIES AND USES OF THE TOXIC CHEMICAL AT THE FACILITY                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |                             |
|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------------------------|
| (IMPORTANT: CHECK ALL THAT APPLY.)                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |                             |
| 3.1                                                                                    | Manufacture the toxic chemical:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3.2 | Process the toxic chemical: |
| a. <input checked="" type="checkbox"/> Produce      b. <input type="checkbox"/> Import | <div style="display: flex; justify-content: space-between;"> <div style="width: 33%;"> <p style="text-align: center; margin-top: 10px;"><u>If produce or import:</u></p> <p>c. <input checked="" type="checkbox"/> For on-site use/processing</p> <p>d. <input checked="" type="checkbox"/> For sale/distribution</p> <p>e. <input type="checkbox"/> As a byproduct</p> <p>f. <input type="checkbox"/> As an impurity</p> </div> <div style="width: 33%;"> <p>a. <input checked="" type="checkbox"/> As a reactant</p> <p>b. <input type="checkbox"/> As a formulation component</p> <p>c. <input type="checkbox"/> As an article component</p> <p>d. <input type="checkbox"/> Repackaging</p> </div> <div style="width: 33%;"> <p>a. <input type="checkbox"/> As a chemical processing aid</p> <p>b. <input type="checkbox"/> As a manufacturing aid</p> <p>c. <input type="checkbox"/> Ancillary or other use</p> </div> </div> |     |                             |

EPCRA. See Part 40, Section 372.30(b) of the *Code of Federal Regulations* for further information on how to calculate the weight of the toxic chemical in the mixture or trade name product. For toxic chemical categories (e.g., nickel compounds), include all chemical compounds in the category when calculating the maximum amount, using the entire weight of each compound.

## Section 5. Quantity of the Toxic Chemical Entering each Environmental Medium

In Section 5, you must account for the total aggregate releases of the toxic chemical to the environment from your facility for the calendar year.

Do not enter the values in Section 5 in gallons, tons, liters, or any measure other than pounds. You must also enter the values as whole numbers. Numbers following a decimal point are not acceptable.

Releases to the environment include emissions to the air, discharges to surface waters, and on-site releases to land and underground injection wells. If you have no releases to a particular media (e.g., stack air), you must check the "NA" box or enter zero; do not leave any part of Section 5 blank.

You are not required to count, as a release, quantities of a toxic chemical that are lost due to natural weathering or corrosion, normal/natural degradation of a product, or normal migration of a toxic chemical from a product. For example, amounts of a listed toxic chemical that migrate from plastic products in storage do not have to be counted in estimates of releases of that toxic chemical from the facility.

All releases of the toxic chemical to the air must be classified as either point or non-point emissions, and included in the total quantity reported for these releases in Sections 5.1 and 5.2. Instructions for columns A, B, and C follow the discussions of Sections 5.1 through 5.5.

### 5.1 Fugitive or Non-Point Air Emissions

Report the total of all releases of the toxic chemical to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments and spills; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions. Engineering estimates and mass balance calculations

(using purchase records, inventories, engineering knowledge or process specifications of the quantity of the toxic chemical entering product, hazardous waste manifests, or monitoring records) may be useful in estimating fugitive emissions.

### 5.2 Stack or Point Air Emissions

Report the total of all releases of the toxic chemical to the air that occur through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from air pollution control equipment would generally fall in this category. Monitoring data, engineering estimates, and mass balance calculations may help you to complete this section.

### 5.3 Discharges to Receiving Streams or Water Bodies

In Section 5.3 you are to enter the name(s) of the stream(s) or water body(ies) to which your facility directly discharges the toxic chemical on which you are reporting. A total of three spaces are provided on page 2 of Form R. Enter the name of each receiving stream or surface water body to which the toxic chemical being reported is directly discharged. Report the name of the receiving stream or water body as it appears on the NPDES permit for the facility. If the stream is not covered by a permit, enter the name of the off-site stream or water body by which it is publicly known. Do not list a series of streams through which the toxic chemical flows. Be sure to include the receiving stream(s) or water body(ies) that receive stormwater runoff from your facility. Do not enter names of streams to which off-site treatment plants discharge. Enter "NA" in Section 5.3.1. if you do not discharge the listed toxic chemical to surface water bodies.

Enter the total annual amount of the toxic chemical released from all discharge points at the facility to each receiving stream or water body. Include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff, if applicable (see instructions for column C below). Do not include discharges to a POTW or other off-site wastewater treatment facilities in this section. These off-site transfers must be reported in Part II, Section 6 of Form R. Wastewater analyses and flowmeter data may provide the quantities you will need to complete this section.

Discharges of listed acids (e.g., hydrogen fluoride; nitric acid; and phosphoric acid,) may be reported as zero if the discharges have been neutralized to pH 6 or above. If

wastewater containing a listed acid is discharged below pH 6, then releases of the acid must be reported. In this case, pH measurements may be used to estimate the amount of mineral acid released.

#### 5.4.1 Underground Injection On-Site to Class I Wells

Enter the total amount of the toxic chemical that was injected into Class I wells at the facility. Chemical analyses, injection rate meters, and RCRA Hazardous Waste Generator Reports are good sources for obtaining data that will be useful in completing this section. Check the Not Applicable "NA" box in Section 5.4.1 if you do not inject the reported toxic chemical into Class I underground wells.

#### 5.4.2 Underground Injection On-Site to Class II-V Wells

Enter the total amount of the toxic chemical that was injected into wells at the facility other than Class I wells. Chemical analyses and injection rate meters are good sources for obtaining data that will be useful in completing this section. Check the Not Applicable "NA" box in Section 5.4.2 if you do not inject the reported toxic chemical into Class II-V underground wells.

### 5.5 Disposal to Land On-Site

Five predefined subcategories for reporting quantities released to land within the boundaries of the facility are provided. Do not report land disposal at off-site locations in this section. Accident histories and spill records may be useful (e.g., release notification reports required under Section 304 of EPCRA and accident histories required under Section 112(r)(7)(B)(ii) of the Clean Air Act).

**5.5.1A RCRA Subtitle C landfills**—Enter the total amount of the toxic chemical that was placed in RCRA Subtitle C landfills. Leaks from landfills need not be reported as a release because the amount of the toxic chemical has already been reported as a release.

**5.5.1B Other landfills** — Enter the total amount of the toxic chemical that was placed in landfills other than RCRA Subtitle C landfills. Leaks from landfills need not be reported as a release because the amount of the toxic chemical has already been reported as a release.

**5.5.2 Land treatment/application farming** — Land treatment is a disposal method in which a waste containing a listed toxic chemical is applied onto or incorporated into soil. While this disposal method is considered a release to

land, any volatilization of listed toxic chemicals into the air occurring during the disposal operation must be included in the total fugitive air releases reported in Part II, Section 5.1 of Form R.

**5.5.3 Surface impoundment** — A surface impoundment is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although some may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids. Examples of surface impoundments are holding, settling, storage, and elevation pits; ponds, and lagoons. If the pit, pond, or lagoon is intended for storage or holding without discharge, it would be considered to be a surface impoundment used as a final disposal method. A facility should determine, to the best of its ability, the percentage of a volatile chemical, e.g. benzene, that is in waste sent to a surface impoundment that evaporates in the reporting year. The facility should report this as a fugitive air emission in section 5.1. The balance should be reported in section 5.5.3.

Quantities of the toxic chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section. However, if the impoundment accumulates sludges containing the toxic chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of Form R.

**5.5.4 Other Disposal**—Includes any amount of a listed toxic chemical released to land that does not fit the categories of landfills, land treatment, or surface impoundment. This other disposal would include any spills or leaks of listed toxic chemicals to land. For example, 2,000 pounds of benzene leaks from a underground pipeline into the land at a facility. Because the pipe was only a few feet from the surface at the erupt point, 30 percent of the benzene evaporates into the air. The 600 pounds released to the air would be reported as a fugitive air release (Part II, Section 5.1) and the remaining 1,400 pounds would be reported as a release to land, other disposal (Part II, Section 5.5.4).

### 5. Column A Total Release

Only on-site releases of the toxic chemical to the environment for the calendar year are to be reported in this section of Form R. The total on-site releases from your facility do not include transfers or shipments of the toxic

chemical from your facility for sale or distribution in commerce, or of wastes to other facilities for waste treatment, recycling, disposal, or energy recovery (see Part II, Section 6 of these Instructions). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released. EPA requires no more than two significant digits when reporting releases (e.g., 7,521 pounds would be reported as 7,500 pounds).

**Releases of Less Than 1,000 Pounds.** For total annual releases or off-site transfers of a toxic chemical from the facility of less than 1,000 pounds, the amount may be reported either as an estimate or by using the range codes that have been developed. The reporting range codes to be used are:

| <u>Code</u> | <u>Range (pounds)</u> |
|-------------|-----------------------|
| A           | 1-10                  |
| B           | 11-499                |
| C           | 500-999               |

Do not enter a range code and an estimate in the same box in column A. Total annual on-site releases or off-site transfers of a toxic chemical from the facility of less than 1 pound may be reported in one of several ways. You should round the value to the nearest pound. If the estimate is greater than 0.5 pounds, you should either enter the range code "A" for "1-10" or enter "1" in column A. If the release is less than 0.5 pounds or less, you may round to zero and enter "0" in column A.

Note that total annual releases of 0.5 pounds or less from the processing or otherwise use of an article maintain the article status of that item. Thus, if the only releases you have are from processing an article, and such releases are 0.5 pounds or less per year, you are not required to submit a report for that toxic chemical. The 0.5 pound release determination does not apply to just a single article. It applies to the cumulative releases from the processing or otherwise use of the same type of article (e.g., sheet metal or plastic film) that occurs over the course of the calendar year.

**Zero Releases.** If you have no releases of a toxic chemical to a particular medium, report either NA, not applicable, or 0, as appropriate. Report NA only when there is no possibility a release could have occurred to a specific media or off-site location. If a release to a specific media or off-site location could have occurred, but either did not occur or the annual aggregate release was less than 0.5 pounds or less, report zero. However, if you report zero releases, a basis of estimate must be provided in column B.

For example, if nitric acid is involved in the facility's processing activities but the facility neutralizes the wastes to a pH of 6 or above, then the facility reports a 0 release for the toxic chemical. If the facility has no underground injection well, "NA" would be written in Part I, Section 4.10 and checked in Part II, Section 5.4.1 and 5.4.2 of Form R. Also, if the facility does not landfill the acidic waste, NA would be checked in Part II, Section 5.5.1.B of Form R.

**Releases of 1,000 Pounds or More.** For releases to any medium that amount to 1,000 pounds or more for the year, you must provide an estimate in pounds per year in column A. Any estimate provided in column A should be reported to no more than two significant figures. This estimate should be in whole numbers. Do not use decimal points.

**Calculating Releases.** To provide the release information required in column A in this section, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility to meet other regulatory requirements or as part of routine plant operations, to the extent you have such data for the toxic chemical.

When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any toxic chemical released into the environment, or of the frequency of such releases, beyond that which is required under other provisions of law or regulation or as part of routine plant operations, is required for the purpose of completing Form R.

You must estimate, as accurately as possible, the quantity (in pounds) of the toxic chemical or chemical category that is released annually to each environmental medium. Include only the quantity of the toxic chemical in this estimate. If the toxic chemical present at your facility was part of a mixture or trade name product, calculate only the releases of the toxic chemical, not the other components of the mixture or trade name product. If you are only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the release of the toxic chemical is proportional to its concentration in the mixture or trade name product. See Part 40, Section 372.30(b) of the *Code of Federal Regulations* for further information on how to calculate the concentration and weight of the toxic chemical in the mixture or trade name product.

If you are reporting a toxic chemical category listed in Table II of these instructions rather than a specific toxic chemical, you combine the release data for all chemicals in the listed toxic chemical category (e.g., all glycol ethers or all chlorophenols) and report the aggregate amount for that toxic chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol to air as fugitive emissions, you should report that your facility releases 11,000 pounds per year of chlorophenols to air as fugitive emissions in Part II, Section 5.1.

For aqueous ammonia solution, releases should be reported based on 10% of total aqueous ammonia. Ammonia evaporating from aqueous ammonia solutions is considered to be anhydrous ammonia; therefore 100% of the anhydrous ammonia should be reported if it is released to the environment. For dissociable nitrate compounds, release estimates should be based on the weight of the nitrate only.

For metal compound categories (e.g., chromium compounds), report release of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released regardless of the chemical form (e.g., as the original salts, chromium oxide) and exclude any contribution to mass made by other species in the molecule.

## 5. Column B Basis of Estimate

For each release estimate, you are required to indicate the principal method used to determine the amount of release reported. You will enter a letter code that identifies the method that applies to the largest portion of the total estimated release quantity.

The codes are as follows:

- M- Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.
- C- Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in wastes entering and leaving process equipment.
- E- Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).
- O- Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas)

or best engineering judgment. This would include applying an estimated removal efficiency to a treatment, even if the composition of the waste before treatment was fully identified through monitoring data.

For example, if 40 percent of stack emissions of the reported toxic chemical were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, you would enter the code letter "M" for monitoring.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the toxic chemical being reported, the form should identify the estimate as based on engineering calculations or best engineering judgment.

If a mass balance calculation yields the flow rate of a waste, but the quantity of reported toxic chemical in the waste is based on solubility data, report "O" because "engineering calculations" were used as the basis of estimate of the quantity of the toxic chemical in the waste.

If the concentration of the toxic chemical in the waste was measured by monitoring equipment and the flow rate of the waste was determined by mass balance, then the primary basis of the estimate is "monitoring" (M). Even though a mass balance calculation also contributed to the estimate, "monitoring" should be indicated because monitoring data were used to estimate the concentration of the waste.

Mass balance (C) should only be indicated if it is directly used to calculate the mass (weight) of toxic chemical released. Monitoring data should be indicated as the basis of estimate **only** if the toxic chemical concentration is measured in the waste being released into the environment. Monitoring data should **not** be indicated, for example, if the monitoring data relate to a concentration of the toxic chemical in other process streams within the facility.

It is important to realize that the accuracy and proficiency of release estimation will improve over time. However, submitters are not required to use new emission factors or estimation techniques to revise previous Form R submissions.

## 5. Column C Percent From Stormwater

This column relates only to Section 5.3 — discharges to receiving streams or water bodies. If your facility has monitoring data on the amount of the toxic chemical in stormwater runoff (including unchanneled runoff), you

must include that quantity of the toxic chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the toxic chemical contributed by stormwater in column C (Section 5.3C).

If your facility has monitoring data on the toxic chemical and an estimate of flow rate, you must use these data to determine the percent stormwater.

If you have monitored stormwater but did not detect the toxic chemical, enter zero (0) in column C. If your facility has no stormwater monitoring data for the chemical, enter not applicable, "NA," in this space on the form.

If your facility does not have periodic measurements of stormwater releases of the toxic chemical, but has submitted chemical-specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. Rates of flow can be estimated by multiplying the annual amount of rainfall by the land area of the facility and then multiplying that figure by the runoff coefficient. The runoff coefficient represents the fraction of rainfall that does not seep into the ground but runs off as stormwater. The runoff coefficient is directly related to how the land in the drainage area is used. (See table on next page)

| <u>Description of Land Area</u> | <u>Runoff Coefficient</u> |
|---------------------------------|---------------------------|
| Business                        |                           |
| Downtown areas                  | 0.70-0.95                 |
| Neighborhood areas              | 0.50-0.70                 |
| Industrial                      |                           |
| Light areas                     | 0.50-0.80                 |
| Heavy areas                     | 0.60-0.90                 |
| Railroad yard areas             | 0.20-0.40                 |
| Unimproved areas                | 0.10-0.30                 |
| Streets                         |                           |
| Asphaltic                       | 0.70-0.95                 |
| Concrete                        | 0.80-0.95                 |
| Brick                           | 0.70-0.85                 |
| Drives and walks                | 0.70-0.85                 |
| Roofs                           | 0.75-0.95                 |
| Lawns: Sandy Soil               |                           |
| Flat, 2%                        | 0.05-0.10                 |
| Average, 2-7%                   | 0.10-0.15                 |
| Steep, 7%                       | 0.15-0.20                 |
| Lawns: Heavy Soil               |                           |
| Flat, 2%                        | 0.13-0.17                 |
| Average, 2-7%                   | 0.18-0.22                 |
| Steep, 7%                       | 0.25-0.35                 |

Choose the most appropriate runoff coefficient for your site or calculate a weighted-average coefficient, which takes into account different types of land use at your facility:

$$\text{Weighted-average runoff coefficient} = (\text{Area 1 \% of total})(C1) + (\text{Area 2 \% of total})(C2) + (\text{Area 3 \% of total})(C3) + \dots + (\text{Area } i \% \text{ of total})(Ci)$$

where  $C_i$  = runoff coefficient for a specific land use of Area  $i$ .

## Section 6 Transfers of the Toxic Chemical in Wastes to Off-Site Locations

You must report in this section the total annual quantity of the toxic chemical in wastes sent to any off-site facility for the purposes of waste treatment, disposal, recycling, or energy recovery. Report the total amount of the toxic chemical transferred off-site after any on-site waste treatment, recycling, or removal is completed. Report zero for transfers of listed mineral acids if they have been neutralized to a pH of 6 or above prior to discharge to a Publicly Owned Treatment Works (POTW).

If you do not discharge wastewater containing the reported toxic chemical to a POTW, enter not applicable, NA, in the box for the POTW's name in Section 6.1.B. If you do not ship or transfer wastes containing the reported toxic chemical to other off-site locations, enter not applicable, NA, in the box for the off-site location's EPA Identification Number in Section 6.2.

**Important:** You must number the boxes for reporting the information for each POTW or other off-site location in Sections 6.1 and 6.2. In the upper left hand corner of each box, the section number is either 6.1.B. or 6.2.

If you report a transfer of the listed toxic chemical to one or more POTWs, number the boxes in Section 6.1.B as 6.1.B.1, 6.1.B.2, etc. If you transfer the listed toxic chemical to more than two POTWs, photocopy page 3 of Form R as many times as necessary and then number the boxes consecutively for each POTW. At the bottom of Section 6, you will find instructions for indicating the total number of page 3s that you are submitting as part of Form R, as well as indicating the sequence of those pages. For example, your facility transfers the reported toxic chemical in wastewaters to three POTWs. You would photocopy page 3 once, indicate at the bottom of each page 3 that there are a total of two page 3s and then indicate the first and second page 3. The boxes for the two POTWs on the first page 3 would be numbered 6.1.B.1 and 6.1.B.2, while the box for third POTW on the second page 3 would be numbered 6.1.B.3.

If you report a transfer of the listed toxic chemical to one or more other off-site locations, number the boxes in section 6.2 as 6.2.1, 6.2.2, etc. If you transfer the listed toxic

**Example 8: Stormwater Runoff**

Your facility is located in a semi-arid region of the United States which has an annual precipitation (including snowfall) of 12 inches of rain. (Snowfall should be converted to the equivalent inches of rain; assume one foot of snow is equivalent to one inch of rain.) The total area covered by your facility is 42 acres (about 170,000 square meters or 1,829,520 square feet). The area of your facility is 50 percent unimproved area, 10 percent asphaltic streets, and 40 percent concrete pavement.

The total stormwater runoff from your facility is therefore calculated as follows:

| <u>Land Use</u>   | <u>% Total Area</u> | <u>Runoff Coefficient</u> |
|-------------------|---------------------|---------------------------|
| Unimproved area   | 50                  | 0.20                      |
| Asphaltic streets | 10                  | 0.85                      |
| Concrete pavement | 40                  | 0.90                      |

Weighted-average runoff coefficient =  $(50\%) \times (0.20) + (10\%) \times (0.85) + (40\%) \times (0.90) = 0.545$

$(\text{Rainfall}) \times (\text{land area}) \times (\text{conversion factor}) \times (\text{runoff coefficient}) = \text{stormwater runoff}$

$(1 \text{ foot}) \times (1,829,520 \text{ ft}^2) \times (7.48 \text{ gal/ft}^3) \times (0.545) = 7,458,221 \text{ gallons/year}$

Total stormwater runoff = 7.45 million gallons/year

Your stormwater monitoring data shows that the average concentration of zinc in the stormwater runoff from your facility from a biocide containing a zinc compound is 1.4 milligrams per liter. The total amount of zinc discharged to surface water through the plant wastewater discharge (non-stormwater) is 250 pounds per year. The total amount of zinc discharged with stormwater is:

$(7,458,000 \text{ gallons stormwater}) \times (3.785 \text{ liters/gallon}) = 28,228,530 \text{ liters stormwater}$

$(28,228,530 \text{ liters stormwater}) \times (1.4 \text{ mg.zinc/liter}) = 31,519.9 \text{ grams zinc} = 87 \text{ pounds zinc.}$

The total amount of zinc discharged from all sources of your facility is:

|                                               |
|-----------------------------------------------|
| 250 pounds zinc from wastewater discharged    |
| <u>+87 pounds zinc from stormwater runoff</u> |
| 337 pounds zinc total water discharged        |

Round to 340 pounds of zinc reported in section 5.3 column A on Form R

The percentage of zinc discharge through stormwater reported in section 5.3 column C on Form is:

$87/337 \times 100 = 26\%$

chemical to more than two other off-site locations, photocopy page 4 of Form R as many times as necessary and then number the boxes consecutively for each off-site location. At the bottom of page 4 you will find instructions for indicating the total number of page 4s that you are submitting as part of Form R as well as indicating the sequence of those pages. For example, your facility transfers the reported toxic chemical to three other off-site locations. You would photocopy page 4 once, indicate at the bottom of Section 6.2 on each page 4 that there are a total of two page 4s and then indicate the first and second page 4. The boxes for the two off-site locations on the first page 4 would be numbered 6.2.1 and 6.2.2, while the box for the third off-site location on the second page 4 would be numbered 6.2.3.

## 6.1 Discharges to Publicly Owned Treatment Works (POTWs)

In Section 6.1.A, estimate the quantity of the reported toxic chemical transferred to all POTWs and the basis upon which the estimate was made. In Section 6.1.B., enter the name and address for each POTW to which your facility discharges wastewater containing the reported toxic chemical.

If you do not discharge wastewater containing the reported toxic chemical to a POTW, enter not applicable, NA, in the box for the POTW's name in Section 6.1.B.

### 6.1.A.1 Total Transfers

Enter the total amount, in pounds, of the reported toxic chemical that is contained in the wastewaters transferred to all POTWs. Do not enter the total poundage of the wastewaters. If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code. The following reporting range codes are to be used:

| Code | Reporting Range (in pounds) |
|------|-----------------------------|
| A    | 1-10                        |
| B    | 11-499                      |
| C    | 500-999                     |

### 6.1.A.2 Basis of Estimate

You must identify the basis for your estimate of the total quantity of the reported toxic chemical in the wastewaters transferred to all POTWs. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

- M - Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.
- C - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.
- E - Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).
- O - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.

If you transfer a toxic chemical to more than one POTW, you should report the basis of estimate that was used to determine the largest percentage of the toxic chemical that was transferred.

## 6.2 Transfers to Other Off-Site Locations

In Section 6.2 enter the EPA Identification Number, name, and address for each off-site location to which your facility ships or transfers wastes containing the reported toxic chemical for the purposes of waste treatment, disposal, recycling, or energy recovery. Also estimate the quantity of the reported toxic chemical transferred and the basis upon which the estimate was made. If appropriate, you must report multiple activities for each off-site location. For example, if your facility sends a reported toxic chemical in waste to an off-site location where some of the toxic chemical is to be recycled while the remainder of the quantity transferred is to be treated, you must report both the waste treatment and recycle activities, along with the quantity associated with each activity.

If your facility transfers a reported toxic chemical to an off-site location and that off-site location performs more than four activities on that chemical, provide the necessary information in Box 6.2.1 for the off-site facility and the first four activities. Provide the information on the remainder of the activities in Box 6.2.2 and provide again the off-site facility identification and location information.

If you do not ship or transfer wastes containing the reported toxic chemical to other off-site locations, enter not applicable, NA, in the box for the off-site locations's EPA Identification Number (defined in 40 CFR 260.10 and therefore commonly referred to as the RCRA ID Number). This number may be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations. If you ship or transfer wastes containing a toxic chemical and the off-site location does not have an EPA Identification Number (e.g., it does not accept RCRA hazardous wastes or the wastes in question are not classified as hazardous), enter NA in the box for the off-site location EPA Identification Number. If you ship or transfer the reported toxic chemical in wastes to another country, enter the Federal Information Processing Standards (FIPS) code for that country in the country field of the address for the off-site facility. The most commonly used FIPS codes are listed below. To obtain a FIPS code for a country not listed here, contact the EPCRA Hotline.

The following is an abridged list of countries to which a U.S. facility might ship a listed toxic chemical.

| <u>Country</u> | <u>Code</u> |
|----------------|-------------|
| Argentina      | AR          |
| Belgium        | BE          |
| Bolivia        | BL          |
| Brazil         | BR          |
| Canada         | CA          |
| Chile          | CI          |
| Columbia       | CO          |
| Costa Rica     | CS          |
| Cuba           | CU          |
| Ecuador        | EC          |
| El Salvador    | ES          |
| France         | FR          |
| Guatemala      | GT          |
| Honduras       | HO          |
| Ireland        | EI          |
| Italy          | IT          |
| Mexico         | MX          |
| Nicaragua      | NU          |
| Panama         | PM          |
| Paraguay       | PA          |
| Peru           | PE          |
| Portugal       | PO          |
| Spain          | SP          |
| Switzerland    | SZ          |
| United Kingdom | UK          |
| Uruguay        | UY          |
| Venezuela      | VE          |

**Note:** You must distinguish between incineration, which is always considered waste treatment, and combustion where energy is actually recovered. When the reported

toxic chemical has a significant heat of combustion value and is transferred to an off-site location for combustion in an industrial kiln, furnace, or boiler, report the quantity as used for the purposes of energy recovery. However, toxic chemicals with little or no heat of combustion value (e.g., chlorofluorocarbons) must be reported as treated.

## 6.2 Column A Total Transfers

For each off-site location, enter the total amount, in pounds, of the toxic chemical that is contained in the waste transferred to that location. Do not enter the total poundage of the waste. If the total amount transferred is less than 1,000 pounds, you may report a range by entering the appropriate range code. The following reporting range codes are to be used:

| <u>Code</u> | <u>Reporting Range (in pounds)</u> |
|-------------|------------------------------------|
| A           | 1-10                               |
| B           | 11-499                             |
| C           | 500-999                            |

If you transfer the toxic chemical in wastes to an off-site facility for distinct and multiple purposes, you must report those activities for each off-site location, along with the quantity of the reported toxic chemical associated with each activity. For example, your facility transfers a total of 15,000 pounds of toluene to an off-site location that will use 5,000 pounds for the purposes of energy recovery, enter 7,500 pounds into a recovery process, and dispose of the remaining 2,500 pounds. These quantities and the associated activity codes must be reported separately in Section 6.2. (See Figure 4 for a hypothetical Section 6.2 completed for two off-site location, one of which receives the transfer of 15,000 pounds of toluene as detailed.) If you need to report more than four off-site transfers (involving different waste management) to one location, continue reporting of these transfers by listing the same location in the next off-site location section.

Do not double or multiple count amounts transferred off-site. For example, when a reported toxic chemical is sent to an off-site facility for sequential activities and the specific quantities associated with each activity are unknown, report only a single quantity (the total quantity transferred to that off-site location) along with a single activity code. In such a case, report the activity applied to the majority of the reported toxic chemical sent off-site, not the ultimate disposition of the toxic chemical. For example, when a toxic chemical is first recovered and then treated with the majority of the toxic chemical being recovered and only a fraction subsequently treated, report the appropriate recycling activity along with the quantity.

**Example 9: Calculating Releases and Transfers**

Your facility disposes of 14,000 pounds of lead chromate ( $\text{PbCrO}_4 \cdot \text{PbO}$ ) in an on-site landfill and transfers 16,000 pounds of lead selenite ( $\text{PbSeO}_4$ ) to an off-site land disposal facility. You would therefore be submitting three separate reports on the following: lead compounds, selenium compounds, and chromium compounds. However, the quantities you would be reporting would be the pounds of "parent" metal being released or transferred off-site. All quantities are based on mass balance calculations (See Section 5.B for information on Basis of Estimate and Section 6.C for waste treatment or disposal codes and information on transfers of toxic chemicals in wastes). You would calculate releases of lead, chromium, and selenium by first determining the percentage by weight of these metals in the materials you use as follows:

|                                                                       |                  |   |                          |
|-----------------------------------------------------------------------|------------------|---|--------------------------|
| <b>Lead Chromate (<math>\text{PbCrO}_4 \cdot \text{PbO}</math>) -</b> | Molecular weight | = | 546.37                   |
| Lead 2 Pb -                                                           | Molecular weight | = | $207.2 \times 2 = 414.4$ |
| Chromium 1 Cr -                                                       | Molecular weight | = | 51.996                   |

Lead chromate is therefore (% by weight)

$$(414.4/546.37) = 75.85\% \text{ lead and}$$

$$(51.996/546.37) = 9.52\% \text{ chromium}$$

|                                                    |                  |   |        |
|----------------------------------------------------|------------------|---|--------|
| <b>Lead Selenite (<math>\text{PbSeO}_4</math>)</b> | Molecular weight | = | 350.17 |
| Lead 1 Pb                                          | Molecular weight | = | 207.2  |
| Selenium 1 Se                                      | Molecular weight | = | 78.96  |

Lead selenite is therefore (% by weight)

$$(207.2/350.17) = 59.17\% \text{ lead and}$$

$$(78.96/350.17) = 22.55\% \text{ selenium.}$$

The total pounds of lead, chromium, and selenium released or transferred from your facility are as follows:

**Lead**

Release:  $0.7585 \times 14,000 = 10,619$  pounds from lead chromate (round to 11,000 pounds)

Transfer:  $0.5917 \times 16,000 = 9,467$  pounds from lead selenite (round to 9,500 pounds)

**Chromium**

Release:  $0.0952 \times 14,000 = 1,333$  pounds from lead chromate (round to 1,300 pounds)

**Selenium**

Transfer:  $0.2255 \times 16,000 = 3,608$  pounds of selenium from lead selenite (round to 3,600 pounds)

## 6.2 Column B Basis of Estimate

You must identify the basis for your estimates of the quantities of the reported toxic chemical in wastes transferred to each off-site location. Enter one of the following letter codes that applies to the method by which the largest percentage of the estimate was derived.

- M - Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.
- C - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in wastes entering and leaving process equipment.
- O - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully identified through monitoring data.
- E - Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).

## 6.2 Column C Types of Waste Management: Treatment/Disposal/Recycling/Energy Recovery

Enter one of the following codes to identify the type of waste treatment, disposal, recycling or energy recovery methods used by the off-site location for the reported toxic chemical. You must use more than one line and code for a single location when distinct quantities of the reported toxic chemical are subject to different waste treatment, purpose of waste treatment, disposal, recycling, or energy recovery. You should use the code that, to the best of your knowledge, represents the ultimate disposition of the chemical.

If the toxic chemical is sent off-site for further direct reuse (e.g., a toxic chemical in metal scrap) and does not undergo a waste management activity (i.e., release [including disposal], treatment, energy recovery, or recycling [recovery] prior to that reuse, it need not be reported in section 6.2 or section 8.

You must distinguish between incineration, which is waste treatment, and legitimate energy recovery. In order for you to claim that a reported toxic chemical sent off-site is used for the purposes of energy recovery and not for waste treatment, the toxic chemical must have a heating value high enough to sustain combustion and must be combusted in a energy recovery unit such as an industrial boiler, furnace, or kiln. In a situation where the reported toxic chemical is in a waste that is combusted in an energy recovery unit, but the toxic chemical does not have a heating value high enough to sustain combustion, use code M54, Incineration/Insignificant Fuel Value, to indicate that the toxic chemical was incinerated in an energy recovery unit but did not contribute to the heating value of the waste (see Figure 4 for an example).

## Metals and Metal Compounds.

Metals and metal compounds (remember that the release and other waste management information that you report for metal compounds will be the total amount of the parent metal released or otherwise managed as waste NOT the whole metal compound) will be managed in waste either by being released (including disposed) or by being recycled. The metal has no heat value and thus cannot be combusted for energy recovery and cannot be treated because it cannot be destroyed. Thus, transfers of metals and metal compounds for further waste management should be reported as either a transfer for recycling or a transfer for disposal. The applicable waste management code for transfers of metals and metal compounds for recycling is M24. Applicable codes for transfers for disposal include M10, M41, M62, M71, M72, M73, M79, M90, M94, and M99. Note that two codes, M41 and M62, are new this year. These codes are for transfers to waste management in which the wastestream may be treated but the metal contained in the wastestream is not treated and is ultimately released. For example, M41 would be used for a metal or metal compound which is stabilized in preparation for disposal.

Applicable codes for Part II, Section 6.2, column C are:

### Disposal

- M10 Storage Only
- M41 Solidification/Stabilization-Metals and Metal Compounds only
- M62 Wastewater Treatment (Excluding POTW)-Metals and Metal Compounds only
- M71 Underground Injection
- M72 Landfill/Disposal Surface Impoundment
- M73 Land Treatment
- M79 Other Land Disposal
- M90 Other Off-Site Management
- M94 Transfer to Waste Broker-Disposal
- M99 Unknown

Figure 4  
Hypothetical Section 6.2 Completed for Two Off-site Locations

| SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS                              |                          |                                                                                                                                        |   |
|--------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---|
| 6.2. 1                                                                         |                          | Off-site EPA Identification Number (RCRA ID No.)<br><b>COD566162461</b>                                                                |   |
| Off-Site Location Name<br><b>Acme Waste Services</b>                           |                          |                                                                                                                                        |   |
| Street Address<br><b>5 Market Street</b>                                       |                          |                                                                                                                                        |   |
| City<br><b>Releaseville</b>                                                    |                          | County<br><b>Hill</b>                                                                                                                  |   |
| State<br><b>∞</b>                                                              | Zip Code<br><b>80461</b> | Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |   |
| A. Total Transfers (pounds/year)<br>(enter range code or estimate)             |                          | B. Basis of Estimate<br>(enter code)                                                                                                   |   |
| C. Type of Waste Treatment/Disposal/<br>Recycling/Energy Recovery (enter code) |                          |                                                                                                                                        |   |
| 1.                                                                             | 5,000                    | 1.                                                                                                                                     | O |
| 2.                                                                             | 7,500                    | 2.                                                                                                                                     | C |
| 3.                                                                             | 2,500                    | 3.                                                                                                                                     | O |
| 4.                                                                             | NA                       | 4.                                                                                                                                     | M |

This off-site location receives a transfer of 15,000 pounds of toluene (as discussed earlier) and will combust 5,000 pounds for the purposes of energy recovery, enter 7,500 pounds into a recovery process, and dispose of the remaining 2,500 pounds.

| SECTION 6.2 TRANSFERS TO OTHER OFF-SITE LOCATIONS                              |                          |                                                                                                                                        |   |
|--------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------|---|
| 6.2. 2                                                                         |                          | Off-site EPA Identification Number (RCRA ID No.)<br><b>COD617725432</b>                                                                |   |
| Off-Site Location Name<br><b>Combustion, Inc.</b>                              |                          |                                                                                                                                        |   |
| Street Address<br><b>25 Facility Road</b>                                      |                          |                                                                                                                                        |   |
| City<br><b>Dumfry</b>                                                          |                          | County<br><b>Burns</b>                                                                                                                 |   |
| State<br><b>∞</b>                                                              | Zip Code<br><b>80500</b> | Is location under control of reporting facility or parent company? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |   |
| A. Total Transfers (pounds/year)<br>(enter range code or estimate)             |                          | B. Basis of Estimate<br>(enter code)                                                                                                   |   |
| C. Type of Waste Treatment/Disposal/<br>Recycling/Energy Recovery (enter code) |                          |                                                                                                                                        |   |
| 1.                                                                             | 12,500                   | 1.                                                                                                                                     | O |
| 2.                                                                             | NA                       | 2.                                                                                                                                     | M |
| 3.                                                                             |                          | 3.                                                                                                                                     | M |
| 4.                                                                             |                          | 4.                                                                                                                                     | M |

This off-site location receives a transfer of 12,500 pounds of tetrachloroethylene (perchloroethylene) that is part of a waste that is combusted for the purposes of energy recovery in an industrial furnace. Note that the perchloroethylene is reported using code M54 to indicate that it is combusted in an energy recovery unit but it does not contribute to the heating value of the waste.

**Recycling**

- M20 Solvents/Organics Recovery
- M24 Metals Recovery
- M26 Other Reuse or Recovery
- M28 Acid Regeneration
- M93 Transfer to Waste Broker-Recycling

**Waste Treatment**

- M40 Solidification/Stabilization
- M50 Incineration/Thermal Treatment
- M54 Incineration/Insignificant Fuel Value
- M61 Wastewater Treatment (Excluding POTW)
- M69 Other Waste Treatment
- M95 Transfer to Waste Broker-Waste Treatment

**Energy Recovery**

- M56 Energy Recovery
- M92 Transfer to Waste Broker-Energy Recovery

## Section 7 On-Site Waste Treatment, Energy Recovery and Recycling Methods

You must report in this section the methods of waste treatment, energy recovery, and recycling applied to the reported toxic chemical in wastes on-site. There are three separate sections for reporting such activities.

### Section 7A On-Site Waste Treatment Methods and Efficiency

Most of the chemical-specific information required by EPCRA Section 313 that is reported on Form R is specific to the toxic chemical rather than the waste stream containing the toxic chemical. However, EPCRA Section 313 does require that waste treatment methods applied on-site to waste streams that contain the toxic chemical be reported. This information is collected in Section 7A of Form R.

In Section 7A, you must provide the following information if you treat the reported toxic chemical on-site:

- (a) the general waste stream types containing the toxic chemical being reported;
- (b) the waste treatment method(s) or sequence used on all waste streams containing the toxic chemical;
- (c) the range of concentration of the toxic chemicals in the influent to the waste treatment method;
- (d) the efficiency of each waste treatment method or waste treatment sequence in destroying or removing the toxic chemical; and
- (e) whether the waste treatment efficiency figure was based on actual operating data.

Use a separate line in Section 7A for each general waste stream type. Report only information about treatment of waste streams at your facility, not information about off-site waste treatment.

If you do not perform on-site treatment of waste streams containing the reported toxic chemical, check the Not Applicable (NA) box at the top of Section 7A.

### 7A Column A General Waste Stream

For each waste treatment method, indicate the type of waste stream containing the toxic chemical that is treated. Enter the letter code that corresponds to the general waste stream type:

- A Gaseous (gases, vapors, airborne particulates)
- W Wastewater (aqueous waste)
- L Liquid waste streams (non-aqueous waste)
- S Solid waste streams (including sludges and slurries)

If a waste is a mixture of water and organic liquid and the organic content is less than 50 percent, report it as a wastewater (W). Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

### 7A Column B Waste Treatment Method(s) Sequence

Enter the appropriate code from the list below for each on-site waste treatment method used on a waste stream containing the toxic chemical, regardless of whether the waste treatment method actually removes the specific toxic chemical being reported. Waste treatment methods must be reported for each type of waste stream being treated (i.e., gaseous waste streams, aqueous waste streams, liquid non-aqueous waste streams, and solids). Except for the air emission treatment codes, the waste treatment codes are not restricted to any medium.

Waste streams containing the toxic chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to waste treatment. Report waste treatment methods that apply to the aggregate waste stream, as well as waste treatment methods that apply to individual waste streams. If your facility treats various wastewater streams containing the toxic chemical in different ways, the different waste treatment methods must be listed separately.

If your facility has several pieces of equipment performing a similar service in a waste treatment sequence, you may combine the reporting for such equipment. It is not necessary to enter four codes to cover four scrubber units, for example, if all four are treating waste streams of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differs from one unit to the next, each scrubber must be listed separately.

If your facility performs more than eight sequential waste treatment methods on a single general waste stream, continue listing the methods in the next row and renumber appropriately those waste treatment method code boxes you used to continue the sequence. For example, if the general waste stream in box 7A.1a had nine treatment methods applied to it, the ninth method would be indicated in the first method box for row 7A.2a. The numeral "1" would be crossed out, and a "9" would be inserted.

Treatment applied to any other general waste stream types would then be listed in the next empty row. In the scenario above, for instance, the second general waste stream would be reported in row 7A.3a. See Figure 5 for an example of a hypothetical Section 7A completed for a nine-step waste treatment process and a single waste treatment method.

If you need additional space to report under Section 7A, photocopy page 4 of Form R as many times as necessary. At the bottom of page 4 you will find instructions for indicating the total number of page 4s that you are submitting as part of Form R, as well as instructions for indicating the sequence of those pages.

#### Waste Treatment Codes

##### Air Emissions Treatment (applicable to gaseous waste streams only)

|     |                              |
|-----|------------------------------|
| A01 | Flare                        |
| A02 | Condenser                    |
| A03 | Scrubber                     |
| A04 | Absorber                     |
| A05 | Electrostatic Precipitator   |
| A06 | Mechanical Separation        |
| A07 | Other Air Emission Treatment |

##### Biological Treatment

|     |                                    |
|-----|------------------------------------|
| B11 | Biological Treatment — Aerobic     |
| B21 | Biological Treatment — Anaerobic   |
| B31 | Biological Treatment — Facultative |
| B99 | Biological Treatment — Other       |

#### Chemical Treatment

|     |                                                           |
|-----|-----------------------------------------------------------|
| C01 | Chemical Precipitation — Lime or Sodium Hydroxide         |
| C02 | Chemical Precipitation — Sulfide                          |
| C09 | Chemical Precipitation — Other                            |
| C11 | Neutralization                                            |
| C21 | Chromium Reduction                                        |
| C31 | Complexed Metals Treatment (other than pH Adjustment)     |
| C41 | Cyanide Oxidation — Alkaline Chlorination                 |
| C42 | Cyanide Oxidation — Electrochemical                       |
| C43 | Cyanide Oxidation — Other                                 |
| C44 | General Oxidation (including Disinfection) — Chlorination |
| C45 | General Oxidation (including Disinfection) — Ozonation    |
| C46 | General Oxidation (including Disinfection) — Other        |
| C99 | Other Chemical Treatment                                  |

#### Incineration/Thermal Treatment

|     |                                        |
|-----|----------------------------------------|
| F01 | Liquid Injection                       |
| F11 | Rotary Kiln with Liquid Injection Unit |
| F19 | Other Rotary Kiln                      |
| F31 | Two Stage                              |
| F41 | Fixed Hearth                           |
| F42 | Multiple Hearth                        |
| F51 | Fluidized Bed                          |
| F61 | Infra-Red                              |
| F71 | Fume/Vapor                             |
| F81 | Pyrolytic Destructor                   |
| F82 | Wet Air Oxidation                      |
| F83 | Thermal Drying/Dewatering              |
| F99 | Other Incineration/Thermal Treatment   |

#### Physical Treatment

|     |                                                           |
|-----|-----------------------------------------------------------|
| P01 | Equalization                                              |
| P09 | Other Blending                                            |
| P11 | Settling/Clarification                                    |
| P12 | Filtration                                                |
| P13 | Sludge Dewatering (non-thermal)                           |
| P14 | Air Flotation                                             |
| P15 | Oil Skimming                                              |
| P16 | Emulsion Breaking — Thermal                               |
| P17 | Emulsion Breaking — Chemical                              |
| P18 | Emulsion Breaking — Other                                 |
| P19 | Other Liquid Phase Separation                             |
| P21 | Adsorption — Carbon                                       |
| P22 | Adsorption — Ion Exchange (other than for recovery/reuse) |
| P23 | Adsorption — Resin                                        |
| P29 | Adsorption — Other                                        |
| P31 | Reverse Osmosis (other than for recovery/reuse)           |

- P41 Stripping — Air
- P42 Stripping — Steam
- P49 Stripping — Other
- P51 Acid Leaching (other than for recovery/reuse)
- P61 Solvent Extraction (other than recovery/reuse)
- P99 Other Physical Treatment

#### Solidification/Stabilization

- G01 Cement Processes (including Silicates)
- G09 Other Pozzolonic Processes (including Silicates)
- G11 Asphaltic Processes
- G21 Thermoplastic Techniques
- G99 Other Solidification Processes

### 7A Column C Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the waste stream (i.e., the influent) as it typically enters the waste treatment step or sequence. The concentration is based on the amount or mass of the toxic chemical in the waste stream as compared to the total amount or mass of the waste stream. Enter in the space provided one of the following code numbers corresponding to the concentration of the toxic chemical in the influent:

- 1 = Greater than 1 percent
- 2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
- 3 = 1 part per million to 100 parts per million
- 4 = 1 part per billion to 1 part per million
- 5 = Less than 1 part per billion

Note: Parts per million (ppm) is:

- o milligrams/kilogram (mass/mass) for solids and liquids;
- o cubiccentimeters/cubic meter (volume/volume) for gases;
- o milligrams/liter for solutions or dispersions of the chemical in water; and
- o milligrams of chemical/kilogram of air for particulates in air.

If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in milligrams/cubic meter, multiply by 0.773 to obtain parts per million. These conversion factors are for standard

conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.

### 7A Column D Waste Treatment Efficiency Estimate

In the space provided, enter the number indicating the percentage of the toxic chemical removed from the waste stream through destruction, biological degradation, chemical conversion, or physical removal. The waste treatment efficiency (expressed as percent removal) represents the percentage of the toxic chemical destroyed or removed (based on amount or mass), not merely changes in volume or concentration of the toxic chemical in the waste stream. The efficiency, which can reflect the overall removal from sequential treatment methods applied to the general waste stream, refers only to the percent destruction, degradation, conversion, or removal of the listed toxic chemical from the waste stream, not the percent conversion or removal of other constituents in the waste stream. The efficiency also does not refer to the general efficiency of the treatment method for any waste stream. For some waste treatment methods, the percent removal will represent removal by several mechanisms, as in an aeration basin, where a toxic chemical may evaporate, biodegrade, or be physically removed from the sludge.

Percent removal can be calculated as follows:

$$\frac{(I - E)}{I} \times 100, \text{ where}$$

I = amount of the toxic chemical in the influent waste stream (entering the waste treatment step or sequence) and

E = amount of the toxic chemical in the effluent waste stream (exiting the waste treatment step or sequence).

Calculate the amount of the toxic chemical in the influent wastestream by multiplying the concentration (by weight) of the toxic chemical in the waste stream by the total amount or weight of the waste stream. In most cases, the percent removal compares the treated effluent to the influent for the particular type of waste stream. For solidification of wastewater, the waste treatment efficiency can be reported as 100 percent if no volatile toxic chemicals were removed with the water or evaporated into the air. Percent removal does not apply to incineration because the waste stream, such as wastewater or liquids, may not exist in a comparable form after waste treatment and the purpose of incineration as a waste treatment is to destroy the toxic chemical by converting it to carbon dioxide and water. In cases where the toxic

Figure 5  
Hypothetical Section 7A

| SECTION 7A. ON-SITE WASTE TREATMENT METHODS AND EFFICIENCY                                                                                                                        |                                                                   |   |     |   |     |   |     |  |                                    |                                        |                                     |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|---|-----|---|-----|---|-----|--|------------------------------------|----------------------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> Not Applicable (NA) - Check here if <u>no</u> on-site waste treatment is applied to any waste stream containing the toxic chemical or chemical category. |                                                                   |   |     |   |     |   |     |  |                                    |                                        |                                     |                          |
| a. General Waste Stream (enter code)                                                                                                                                              | b. Waste Treatment Method(s) Sequence (enter 3-character code(s)) |   |     |   |     |   |     |  | c. Range of Influent Concentration | d. Waste Treatment Efficiency Estimate | e. Based on Operating Data?         |                          |
| 7A.1a                                                                                                                                                                             | 7A.1b                                                             | 1 | P12 | 2 | P18 |   |     |  | 7A.1c                              | 7A.1d                                  | 7A.1e                               |                          |
| W                                                                                                                                                                                 |                                                                   | 3 | P17 | 4 | P61 | 5 | P42 |  | NA                                 | %                                      | Yes                                 | No                       |
|                                                                                                                                                                                   |                                                                   | 6 | P21 | 7 | B21 | 8 | P11 |  |                                    |                                        | <input type="checkbox"/>            | <input type="checkbox"/> |
| 7A.2a                                                                                                                                                                             | 7A.2b                                                             | 9 | C44 | 2 | NA  |   |     |  | 7A.2c                              | 7A.2d                                  | 7A.2e                               |                          |
|                                                                                                                                                                                   |                                                                   | 3 |     | 4 |     | 5 |     |  | 1                                  | 99 %                                   | Yes                                 | No                       |
|                                                                                                                                                                                   |                                                                   | 6 |     | 7 |     | 8 |     |  |                                    |                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7A.3a                                                                                                                                                                             | 7A.3b                                                             | 1 | A01 | 2 | NA  |   |     |  | 7A.3c                              | 7A.3d                                  | 7A.3e                               |                          |
| A                                                                                                                                                                                 |                                                                   | 3 |     | 4 |     | 5 |     |  | 1                                  | 91 %                                   | Yes                                 | No                       |
|                                                                                                                                                                                   |                                                                   | 6 |     | 7 |     | 8 |     |  |                                    |                                        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

chemical is incinerated, the percent efficiency must be based on the amount of the toxic chemical destroyed or combusted, except for metals or metal compounds. In the cases where a metal or metal compound is incinerated, the efficiency is always zero for the parent metal.

Similarly, an efficiency of zero must be reported for any waste treatment method(s) (e.g., evaporation) that does not destroy, chemically convert, or physically remove the toxic chemical from the waste stream.

For metal compounds, the calculation of the reportable concentration and waste treatment efficiency must be based on the weight of the parent metal, not on the weight of the metal compounds. Metals are not destroyed, only physically removed or chemically converted from one form into another. The waste treatment efficiency reported must represent only physical removal of the parent metal from the waste stream (except for incineration), not the percent chemical conversion of the metal compound. If a listed waste treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported with a waste treatment efficiency of zero.

Listed toxic chemicals that are strong mineral acids neutralized to a pH of 6 or above are considered treated at a 100 percent efficiency.

All data available at your facility must be used to calculate waste treatment efficiency and influent toxic chemical concentration. If data are lacking, estimates must be made using best engineering judgment or other methods.

## 7A Column E Based on Operating Data?

This column requires you to indicate "Yes" or "No" to whether the waste treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions.

If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, check "No."

## Section 7B On-Site Energy Recovery Processes

In Section 7B, you must indicate the on-site energy recovery methods used on the reported toxic chemical. If you do not perform on-site energy recovery for the reported toxic chemical, check the Not Applicable (NA) box at the top of Section 7B.

### Example 10: Reporting On-Site Energy Recovery

One waste stream generated by your facility contains, among other chemicals, toluene and Freon 113. Threshold quantities are exceeded for both of these toxic chemicals, and you would, therefore, submit two separate Form R reports. This waste stream is sent to an on-site industrial furnace which uses the heat generated in a thermal hydrocarbon cracking process at your facility. Because toluene has a significant heat value (17,440 BTU/pound) and the energy is recovered in an industrial furnace, the code "U02" would be reported in Section 7B for the Form R submitted for toluene.

However, as Freon 113 does not contribute any value for energy recovery purposes, the combustion of Freon 113 in the industrial furnace is considered waste treatment, not energy recovery. You would report Freon 113 as entering a waste treatment step (i.e., incineration), in Section 7A, column b.

Only listed toxic chemicals that have a significant heating value and are combusted in an energy recovery unit such as an industrial furnace, kiln, or boiler, can be reported as combusted for energy recovery in this section. If a reported toxic chemical is incinerated on-site but does not contribute energy to the process (e.g., chlorofluorocarbons), it must be considered waste treated on-site and reported in Section 7A. Metals and metal compounds cannot be combusted for energy recovery. Energy recovery may take place only in one of the types of energy recovery equipment listed below.

### Energy Recovery Codes

|     |                               |
|-----|-------------------------------|
| U01 | Industrial Kiln               |
| U02 | Industrial Furnace            |
| U03 | Industrial Boiler             |
| U09 | Other Energy Recovery Methods |

If your facility uses more than one on-site energy recovery method for the reported toxic chemical, list the methods used in descending order (greatest to least) based on the amount of the toxic chemical entering such methods.

## Section 7C On-Site Recycling Processes

In Section 7C, you must report the recycling methods used on the listed toxic chemical. If you do not conduct any on-site recycling of the reported toxic chemical, check the Not Applicable (NA) box at the top of Section 7C.

In this section, use the codes below to report only the recycling methods in place at your facility that are applied to the listed toxic chemical. Do not list any off-site recycling activities (Information about off-site recycling must be reported in Part II, Section 6, "Transfers of the Toxic Chemical in Wastes to Off-Site Locations.")

### On-Site Recycling Codes

- R11 Solvents/Organics Recovery — Batch Still Distillation
- R12 Solvents/Organics Recovery — Thin-Film Evaporation
- R13 Solvents/Organics Recovery — Fractionation
- R14 Solvents/Organics Recovery — Solvent Extraction
- R19 Solvents/Organics Recovery — Other
- R21 Metals Recovery — Electrolytic
- R22 Metals Recovery — Ion Exchange
- R23 Metals Recovery — Acid Leaching
- R24 Metals Recovery — Reverse Osmosis
- R26 Metals Recovery — Solvent Extraction
- R27 Metals Recovery — High Temperature
- R28 Metals Recovery — Retorting
- R29 Metals Recovery — Secondary Smelting
- R30 Metals Recovery — Other
- R40 Acid Regeneration
- R99 Other Reuse or Recovery

If your facility uses more than one on-site recycling method for a toxic chemical, enter the codes in the space provided in descending order (greatest to least) of the volume of the reported toxic chemical recovered by each process. If your facility uses more than ten separate methods for recycling the reported toxic chemical on-site, then list the ten activities that recover the greatest amount of the toxic chemical (again, in descending order).

## Section 8 Source Reduction and Recycling Activities

This Section includes the data elements mandated by section 6607 of the Pollution Prevention Act of 1990 (PPA). Section 8 is a required section of Form R and must be completed.

In Section 8, you must provide information about source reduction and recycling activities related to the toxic chemical for which releases are being reported. For all appropriate questions, report only the quantity, in pounds, of the reported toxic chemical. Do not include the weight of water, soil, or other waste constituents. When reporting on the metal compound categories, report only the amount of the parent metal as you do when estimating release amounts. All amounts must be reported in whole numbers and up to two significant figures can be provided.

Section 8.1 through 8.9 must be completed for each toxic chemical. Section 8.10 must be completed only if a source reduction activity was newly implemented specifically (in whole or in part) for the reported toxic chemical during the reporting year. Section 8.11 allows you to indicate if you have attached additional optional information on source reduction, recycling, or pollution control activities implemented at any time at your facility.

Sections 8.1 through 8.7 require reporting of quantities for the current reporting year, the prior year, and quantities anticipated in both the first year immediately following the reporting year and the second year following the reporting year (future estimates).

Beginning with the 1995 reporting year, facilities can use applicable, "NA," in Sections 8.1 through 8.7 to indicate that there is no on-site or off-site recycling, energy recovery, treatment, or release.

### Column A: Prior Year

Quantities for Sections 8.1 through 8.7 must be reported for the year immediately preceding the reporting year in column A. For reports due July 1, 1998 (reporting year 1997), the prior year is 1996. Information available at the facility that may be used to estimate the prior year's quantities include the prior year's Form R submission, supporting documentation, and recycling, energy recovery, or treatment operating logs or invoices.

### Column B: Current Reporting Year

Quantities for Sections 8.1 through 8.7 must be reported for the current reporting year (1997) in column B.

### Columns C and D: Following Year and Second Following Year

Quantities for Sections 8.1 through 8.7 must be estimated for 1998 and 1999. EPA expects reasonable future quantity estimates using a logical basis. Information available at the facility to estimate quantities of the chemical expected during these years include planned source reduction activities, market projections, expected contracts, anticipated new product lines, company growth projections, and production capacity figures. Respondents should take into account protections available for trade secrets as provided in EPCRA Section 322 (42 USC 11042).

### Relationship to Other Laws

The reporting categories for quantities recycled, treated, used for energy recovery, and disposed apply to completing Section 8 of Form R as well as to the rest of Form R. These categories are to be used only for TRI reporting. They are not intended for use in determining, under the Resource Conservation and Recovery Act

#### Example 11: Reporting Future Estimates

A pharmaceutical manufacturing facility uses a listed toxic chemical in the manufacture of a prescription drug. During the reporting year (1997), the company received approval from the Food and Drug Administration to begin marketing their product as an over-the-counter drug beginning in 1998. This approval is publicly known and does not constitute confidential business information. As a result of this expanded market, the company estimates that sales and subsequent production of this drug will increase their use of the reported toxic chemical by 30 percent per year for the two years following the reporting year. The facility treats the toxic chemical on-site and the quantity treated is directly proportional to production activity. The facility thus estimates the total quantity of the reported toxic chemical treated for the following year (1998) by adding 30 percent to the amount in column B (the amount for the current reporting year). The second following year (1999) figure can be calculated by adding an additional 30 percent to the amount reported in column C (the amount for the following year (1998) projection).

(RCRA) Subtitle C regulations, whether a secondary material is a waste when recycled. These definitions also do not apply to the information that may be submitted in the Biennial Report required under RCRA. In addition, these definitions do not imply any future redefinition of RCRA terms and do not affect EPA's RCRA authority or authority under any other statute administered by EPA.

Differences in terminology and reporting requirements for toxic chemicals reported on Form R and for hazardous wastes regulated under RCRA occur because EPCRA and the PPA focus on specific chemicals, while the RCRA regulations and the Biennial Report focus on waste streams which may include more than one chemical. For example, a RCRA hazardous waste containing a section 313 toxic chemical is recycled to recover certain constituents of that waste, but not the toxic chemical reported under EPCRA section 313. The toxic chemical simply passes through the recycling process and remains in the residual from the recycling process, which is disposed. While the waste may be considered recycled under RCRA, the toxic chemical constituent would be considered to be disposed for TRI purposes.

### Quantities Reportable in Sections 8.1 - 8.7

Section 8 of Form R uses data collected to complete Part II, Sections 5 through 7. For this reason, Section 8 should be completed last. Sections 8.1, 8.3, 8.5, 8.7, and 8.8 use data collected to complete sections 5 and 6 of Form R. The relationship between sections 5, 6, and 8.8 to sections 8.1, 8.3, 8.5, and 8.7 are provided below in equation form.

**8.1** Report releases pursuant to EPCRA Section 329(8) including "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing [on-site or off-site] into the environment (including the abandonment of barrels, containers, and other closed receptacles)." Do not include any quantity treated on-site or reported as treated off-site in section 6.

Metals and metal compounds reported, 1) in section 6.2 as sent off-site for stabilization/solidification (M41) or wastewater treatment (excluding POTWs) (M62) and/or, 2) in section 6.1—discharges to POTWs should be reported in section 8.1. These quantities should NOT be reported section 8.7.

**$\$ 8.1 = \$ 5 + \$ 6.2 \text{ (disposal only)} + \$ 6.1 \text{ (metals and metal compounds only)} - \$ 8.8 \text{ (release or off-site disposal only)}$**

**8.2 - 8.3** A toxic chemical or a mixture containing a toxic chemical that is used for energy recovery on-site or is sent off-site for energy recovery, unless it is a commercially available fuel (e.g. fuel oil no. 6). For the purposes of reporting on Form R, reportable on-site and off-site energy recovery is the combustion of a waste containing a Section 313 toxic chemical when:

- (a) The combustion unit is integrated into an energy recovery system (i.e., industrial furnaces, industrial kilns, and boilers); and
- (b) The toxic chemical is combustible and has a heating value high enough to sustain combustion. (e.g., 5000 BTU)

**8.4 - 8.5** A toxic chemical in a waste that is recycled on-site or is sent off-site for recycling.

**$\$ 8.5 = \$ 6.2 \text{ (recycling)} - \$ 8.8 \text{ (off-site recycling)}$**

**8.6 - 8.7** A toxic chemical (except for metals and metal compounds) or a mixture containing a toxic chemical that is treated on-site or is sent to a POTW or other off-site location for waste treatment.

**$\$ 8.7 = \$ 6.1 + \$ 6.2 \text{ (treatment)} - \$ 8.8 \text{ (off-site treatment)}$**

A toxic chemical or a toxic chemical in a mixture that is a waste under RCRA must be reported in Sections 8.1 through 8.7.

### Avoid Double-Counting in Sections 8.1 Through 8.8

Do not double- or multiple-count quantities in Sections 8.1 through 8.7. The quantities reported in each of those sections must be mutually exclusive. Do not multiple-count quantities entering sequential reportable activities. For example, 5,000 pounds of toxic chemical enters a treatment operation. Three thousand pounds of the toxic chemical exits the treatment operation and then enters a recycling operation. Five hundred pounds of the toxic chemical are in residues from the recycling operation which is subsequently sent off-site for disposal. These quantities would be reported as follows in Section 8:

|              |                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------|
| Section 8.1: | 500 pounds disposed                                                                                        |
| Section 8.4: | 2,500 pounds recycled                                                                                      |
| Section 8.6: | 2,000 pounds treated (5,000<br>that initially entered - 3,000<br>that subsequently entered re-<br>cycling) |

following events:

- (1) remedial actions,
- (2) catastrophic events such as earthquakes, fires, or floods; or
- (3) one-time events not associated with normal or routine production processes.

*To report that 5,000 pounds were treated, 3,000 pounds were recycled, and that 500 pounds were sent off-site for disposal would result in over-counting the quantities of toxic chemical recycled, treated, and disposed by 3,500 pounds.*

Do not include in Sections 8.1 through 8.7 any quantities of the toxic chemical released into the environment due to remedial actions; catastrophic events such as earthquakes, fires, or floods; or unanticipated one-time events not associated with the production process such as tank ruptures or reactor explosions. These quantities should be reported in Section 8.8 only. For example, 10,000 pounds of diaminoanisole sulfate is released due to a catastrophic event and is subsequently treated off-site. The 10,000 pounds is reported in Section 8.8, but the amount subsequently treated off-site is not reported in Section 8.7.

### **8.8 Quantity Released to the Environment as a Result of Remedial Actions, Catastrophic Events, or One-Time Events Not Associated with Production Process**

In Section 8.8, enter the total quantity of toxic chemical released directly into the environment or sent off-site for recycling, waste treatment, energy recovery, or disposal during the reporting year due to any of the

These quantities should not be included in Sections 8.1 through 8.7.

The purpose of this section is to separate quantities recycled, used for energy recovery, treated, or disposed that are associated with normal or routine production operations from those that are not. While all quantities released, recycled, treated, or disposed may ultimately be preventable, this section separates the quantities that are more likely to be reduced or eliminated by process-oriented source reduction activities from those releases that are largely unpredictable and are less amenable to such source reduction activities. For example, spills that occur as a routine part of production operations and could be reduced or eliminated by improved handling, loading, or unloading procedures are included in the quantities reported in Section 8.1 through 8.7 as appropriate. A total loss of containment resulting from a tank rupture caused by a tornado would be included in the quantity reported in Section 8.8.

Similarly, the amount of a toxic chemical cleaned up from spills resulting from normal operations during the reporting year would be included in the quantities reported in Sections 8.1 through 8.7. However, the quantity of the reported toxic chemical generated from a remedial action (e.g., RCRA corrective action) to clean

#### **Example 12: Quantity Released to the Environment as a Result of Remedial Actions, Catastrophic Events, or One-Time Events Not Associated with Production Processes.**

A chemical manufacturer produces a toxic chemical in a reactor that operates at low pressure. The reactants and the toxic chemical product are piped in and out of the reactor at monitored and controlled temperatures. During normal operations, small amounts of fugitive emissions occur from the valves and flanges in the pipelines.

Due to a malfunction in the control panel (which is state-of-the-art and undergoes routine inspection and maintenance), the temperature and pressure in the reactor increase, the reactor ruptures, and the toxic chemical is released. Because the malfunction could not be anticipated and, therefore, could not be reasonably addressed by specific source reduction activities, the amount released is included in Section 8.8. In this case, much of the toxic chemical is released as a liquid and pools on the ground. It is estimated that 1,000 pounds of the toxic chemical pooled on the ground and was subsequently collected and sent off-site for treatment. In addition, it is estimated that another 200 pounds of the toxic chemical vaporized directly to the air from the rupture. The total amount reported in Section 8.8 is the 1,000 pounds that pooled on the ground (and subsequently sent off-site), plus the 200 pounds that vaporized into the air, a total of 1,200 pounds. The quantity sent off-site must also be reported in Section 6 (but not in Section 8.7) and the quantity that vaporized must be reported as a fugitive emission in Section 5 (but not in Section 8.1).

up the environmental contamination resulting from past practices should be reported in Section 8.8 because they cannot currently be addressed by source reduction methods. A remedial action for purposes of Section 8.8 is a waste cleanup (including RCRA and CERCLA operations) within the facility boundary. Most remedial activities involve collecting and treating contaminated material.

Also, releases caused by catastrophic events are to be incorporated into the quantity reported in Section 8.8. Such releases may be caused by natural disasters (e.g., hurricanes and earthquakes) or by large scale accidents (e.g., fires and explosions). These amounts are not included in the quantity reported in Sections 8.1 through 8.7 because such releases are generally unanticipated and cannot be addressed by routine process-oriented accident prevention techniques.

By checking your documentation for calculating estimates made for Part II, Section 5, "Quantity of the Toxic Chemical Entering each Environmental Medium," you may be able to identify release amounts from the above sources. Emergency notifications under CERCLA and EPCRA as well as accident histories required under the Clean Air Act may provide useful information. You should also check facility incident reports and maintenance records to identify one-time or catastrophic events.

Note: While the information reported in Section 8.8 represents only remedial, catastrophic, or one-time events not associated with production processes, Section 5 of Form R (releases to the environment) and Section 6 (off-site transfers), must include all releases and transfers as appropriate, regardless of whether they arise from catastrophic, remedial, or routine process operations.

## 8.9 Production Ratio or Activity Index

For Section 8.9, you must provide a ratio of reporting year production to prior year production, or provide an "activity index" based on a variable other than production that is the primary influence on the quantity of the reported toxic chemical recycled, used for energy recovery, treated, or released. The ratio or index must be reported to the nearest tenths or hundredths place (e.g., one or two digits to the right of the decimal point). If the manufacture or use of the reported toxic chemical began during the current reporting year, enter not applicable, "NA," as the production ratio or activity index.

### Example 13: Determining a Production Ratio

Your facility's only use of toluene is as a paint carrier for a painting operation. You painted 12,000 refrigerators in the current reporting year and 10,000 refrigerators during the preceding year. The production ratio for toluene in this case is 1.2 (12,000/10,000) because the number of refrigerators produced is the primary factor determining the quantity of toluene to be reported in Sections 8.1 through 8.7.

A facility manufactures inorganic pigments, including titanium dioxide. Hydrochloric acid is produced as a waste byproduct during the production process. An appropriate production ratio for hydrochloric acid is the annual titanium dioxide production, not the amount of byproduct generated. If the facility produced 20,000 pounds of titanium dioxide during the reporting year and 26,000 pounds in the preceding year, the production ratio would be 0.77 (20,000/26,000).

It is important to realize that if your facility reports more than one reported toxic chemical, the production ratio or activity index may vary for different chemicals. For facilities that manufacture reported toxic chemicals, the quantities of the toxic chemical(s) produced in the current and prior years provide a good basis for the ratio because that is the primary business activity associated with the reported toxic chemical(s). In most cases, the production ratio or activity index must be based on some variable of production or activity rather than on toxic chemical or material usage. Indices based on toxic chemical or material usage may reflect the effect of source reduction activities rather than changes in business activity. Toxic chemical or material usage is therefore not a basis to be used for the production ratio or activity index where the toxic chemical is "otherwise-used" (i.e., non-incorporative activities such as extraction solvents, metal degreasers, etc.).

While several methods are available to the facility for determining this data element, the production ratio or activity index must be based on the variable that most directly affects the quantities of the toxic chemical recycled, used for energy recovery, treated, or released. Examples of methods available include:

- (1) Amount of toxic chemical manufactured in 1997 divided by the amount of toxic chemical manufactured in 1996; or
- (2) Amount of product produced in 1997 divided by the amount of product produced in 1996.

**Example 14: Determining an Activity Index**

Your facility manufactures organic dyes in a batch process. Different colors of dyes are manufactured, and between color changes, all equipment must be thoroughly cleaned with solvent containing glycol ethers to reduce color carryover. During the preceding year, the facility produced 2,000 pounds of yellow dye in January, 9,000 pounds of green dye for February through September, 2,000 pounds of red dye in November, and another 2,000 pounds of yellow dye in December. This adds up to a total of 15,000 pounds and four color changeovers. During the reporting year, the facility produced 10,000 pounds of green dye during the first half of the year and 10,000 pounds of red dye in the second half. If your facility uses glycol ethers in this cleaning process only, an activity index of 0.5 (based on two color changeovers for the reporting year divided by four changeovers for the preceding year) is more appropriate than a production ratio of 1.33 (based on 20,000 pounds of dye produced in the current year divided by 15,000 pounds in the preceding year). In this case, an activity index, rather than a production ratio, better reflects the factors that influence the amount of solvent recycled, used for energy recovery, treated, or released.

A facility that manufactures thermoplastic composite parts for aircraft uses toluene as a wipe solvent to clean molds. The solvent is stored in 55-gallon drums and is transferred to 1-gallon dispensers. The molds are cleaned on an as-needed basis that is not necessarily a function of the parts production rate. Operators cleaned 5,200 molds during the reporting year, but only cleaned 2,000 molds in the previous year. An activity index of 2.6 ( $5,200/2,000$ ) represents the activities involving toluene usage in the facility. If the molds were cleaned after 1,000 parts were manufactured, a production ratio would equal the activity index and either could be used as the basis for the index.

A facility manufactures surgical instruments and cleans the metal parts with 1,1,1-trichloroethane in a vapor degreaser. The degreasing unit is operated in a batch mode and the metal parts are cleaned according to an irregular schedule. The activity index can be based upon the total time the metal parts are in the degreasing operation. If the degreasing unit operated 3,900 hours during the reporting year and 3,000 hours the prior year, the activity index is 1.3 ( $3,900/3,000$ ).

**Example 15: "NA" is Entered as the Production Ratio or Activity Index**

Your facility began production of a microwidget during this reporting year. Perchloroethylene is used as a cleaning solvent for this operation and this is the only use of the toxic chemical in your facility. You would enter not applicable, "NA," in Section 8.9 because you have no basis of comparison in the prior year for the purposes of developing the activity index.

**Example 16: Determining the Production Ratio Based on a Weighted Average**

At many facilities, a reported toxic chemical is used in more than one production process. In these cases, a production ratio or activity index can be estimated by weighting the production ratio for each process based on the respective contribution of each process to the quantity of the reported toxic chemical recycled, used for energy recovery, treated, or disposed.

Your facility paints bicycles with paint containing toluene. Sixteen thousand bicycles were produced in the reporting year and 14,500 were produced in the prior year. There were no significant design modifications that changed the total surface area to be painted for each bike. The bicycle production ratio is 1.1 (16,000/14,500). You estimate 12,500 pounds of toluene treated, recycled, used for energy recovery, or released as a result of bicycle production. Your facility also uses toluene as a solvent in a glue that is used to make components and add-on equipment for the bicycles. Thirteen thousand components were manufactured in the reporting year as compared to 15,000 during the prior year. The production ratio for the components using toluene is 0.87 (13,000/15,000). You estimate 1,000 pounds of toluene treated, recycled, used for energy recovery, or released as a result of components production. A production ratio can be calculated by weighting each of the production ratios based on the relative contribution each has to the quantities of toluene treated, recycled, used for energy recovery, or released during the reporting year (13,500 pounds). The production ratio is calculated as follows:

$$\text{Production ratio} = (12,500/13,500 \times 1.1) + (1,000/13,500 \times 0.87) = 1.08$$

### 8.10 Did Your Facility Engage in any Source Reduction Activities for this Chemical during the Reporting Year?

If your facility engaged in any source reduction activity for the reported toxic chemical during the reporting year, report the activity that was implemented and the method used to identify the opportunity for the activity implemented. If your facility did not engage in any source reduction activity for the reported toxic chemical, enter not applicable, "NA," in Section 8.10.1 and answer Section 8.11.

Source reduction means any practice which:

- ☐ Reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and
- ☐ Reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

The term source reduction does not include any practice which alters the physical, chemical, or biological characteristics or the volume of a hazardous substance, pollutant, or contaminant through a process or activity which itself is not integral to and necessary for the production of a product or the providing of a service.

Source reduction activities do not include recycling, treating, using for energy recovery, or disposing of a toxic chemical. Report in this section only the source reduction activities implemented to reduce or eliminate the quantities reported in Sections 8.1 through 8.7 — the focus of the section is only those activities that are applied to reduce routine or reasonably anticipated releases and quantities of the reported toxic chemical recycled, treated, used for energy recovery, or disposed. Do not report in this section any activities taken to reduce or eliminate the quantities reported in Section 8.8.

**Example 17: Source Reduction**

A facility assembles and paints furniture. Both the glue used to assemble the furniture and the paints contain listed toxic chemicals. By examining the gluing process, the facility discovered that a new drum of glue is opened at the beginning of each shift, whether the old drum is empty or not. By adding a mechanism that prevents the drum from being changed before it is empty, the need for disposal of the glue is eliminated at the source. As a result, this activity is considered source reduction. The painting process at this facility generates a solvent waste which is collected and recovered. The recovered solvent is used to clean the painting equipment. The recycling activity does not reduce the amount of toxic chemical recycled, and therefore is not considered a source reduction activity.

**Source Reduction Activities**

You must enter in the first column of Section 8.10, "Source Reduction Activities," the appropriate code(s) indicating the type of actions taken to reduce the amount of the reported toxic chemical released (as reported in Section 8.1), used for energy recovery (as reported in Sections 8.2-8.3), recycled (as reported in Sections 8.4-8.5), or treated (as reported in Sections 8.6-8.7). The list of codes below includes many, but not all, of the codes provided in the RCRA biennial report. Remember that source reduction activities include only those actions or techniques that reduce or eliminate the amounts of the toxic chemical reported in Sections 8.1 through 8.7. Actions taken to recycle, treat, or dispose of the toxic chemical are not considered source reduction activities.

**Source Reduction Activity Codes:**Good Operating Practices

- W13 Improved maintenance scheduling, recordkeeping, or procedures
- W14 Changed production schedule to minimize equipment and feedstock changeovers
- W19 Other changes in operating practices

Inventory Control

- W21 Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life
- W22 Began to test outdated material — continue to use if still effective
- W23 Eliminated shelf-life requirements for stable materials
- W24 Instituted better labelling procedures
- W25 Instituted clearinghouse to exchange materials that would otherwise be discarded
- W29 Other changes in inventory control

Spill and Leak Prevention

- W31 Improved storage or stacking procedures
- W32 Improved procedures for loading, unloading, and transfer operations
- W33 Installed overflow alarms or automatic shut-off valves
- W35 Installed vapor recovery systems
- W36 Implemented inspection or monitoring program of potential spill or leak sources
- W39 Other spill and leak prevention

Raw Material Modifications

- W41 Increased purity of raw materials
- W42 Substituted raw materials
- W49 Other raw material modifications

Process Modifications

- W51 Instituted recirculation within a process
- W52 Modified equipment, layout, or piping
- W53 Use of a different process catalyst
- W54 Instituted better controls on operating bulk containers to minimize discarding of empty containers
- W55 Changed from small volume containers to bulk containers to minimize discarding of empty containers
- W58 Other process modifications

Cleaning and Degreasing

- W59 Modified stripping/cleaning equipment
- W60 Changed to mechanical stripping/cleaning devices (from solvents or other materials)
- W61 Changed to aqueous cleaners (from solvents or other materials)
- W63 Modified containment procedures for cleaning units
- W64 Improved draining procedures

- W65 Redesigned parts racks to reduce dragout
- W66 Modified or installed rinse systems
- W67 Improved rinse equipment design
- W68 Improved rinse equipment operation
- W71 Other cleaning and degreasing modifications

#### Surface Preparation and Finishing

- W72 Modified spray systems or equipment
- W73 Substituted coating materials used
- W74 Improved application techniques
- W75 Changed from spray to other system
- W78 Other surface preparation and finishing modifications

#### Product Modifications

- W81 Changed product specifications
- W82 Modified design or composition of product
- W83 Modified packaging
- W89 Other product modifications

In columns a through c of Section 8.10, the "Methods to Identify Activity", you must enter one or more of the following code(s) that correspond to those internal and external method(s) or information sources you used to identify the possibility for a source reduction activity implementation at your facility. If more than three methods were used to identify the source reduction activity, enter only the three codes that contributed most to the decision to implement the activity.

#### **Methods to Identify Activity**

- T01 Internal pollution prevention opportunity audit(s)
- T02 External pollution prevention opportunity audit(s)
- T03 Materials balance audits
- T04 Participative team management
- T05 Employee recommendation (independent of a formal company program)
- T06 Employee recommendation (under a formal company program)
- T07 State government technical assistance program
- T08 Federal government technical assistance program
- T09 Trade association/industry technical assistance program
- T10 Vendor assistance
- T11 Other

### **8.11 Is Additional Information on Source Reduction, Recycling, or Pollution Control Activities Included with this Report?**

Check "Yes" for this data element if you have attached to this report any additional optional information on source reduction, recycling, or pollution control activities you have implemented in the reporting year or in prior years for the reported toxic chemical. If you are not including additional information, check "No."

If you submit additional optional information, try to *limit this information to one page that summarizes the source reduction, recycling, or pollution control activities*. If there is a contact person at the facility, other than the technical or public contact provided in Part I, Section 4, the summary page should include that person's name and telephone number for individuals who wish to obtain further information about those activities. Also submit a copy of this additional information to the appropriate state agency as part of the Form R submittal to that agency.

## D. How to Determine if Your Facility Qualifies for the Alternate Threshold and is Eligible for Reporting on the Form A

### D.1 Alternate Threshold

On November 30, 1994, EPA published a final rule (59 FR 61488) that provides qualifying facilities a reduced reporting option. Eligible facilities wishing to take advantage of this reduced reporting option may report on a simplified two page form referred to as Form A and do not have to use Form R. The "TRI Alternate Threshold for Facilities with Low Annual Reportable Amounts," provides facilities otherwise meeting EPCRA section 313 reporting thresholds the option of reporting on Form A provided that they do not exceed 500 pounds for the total annual reportable amount (defined below) for that chemical, and that their amounts manufactured or processed or otherwise used do not exceed 1 million pounds. As with determining section 313 reporting thresholds, amounts manufactured, processed, or otherwise used are to be considered independently. This modification does not apply to forms being submitted on or before July 1, 1995 (covering the 1994 reporting year). If you fill out a Form A for a toxic chemical do not fill out a Form R for that same chemical.

### D.2 What is the Form A (certification statement)?

The Form A, which is described as the "certification statement" in 59 FR 61488, is a simplified form of reporting and is intended as a means to reduce the compliance burden associated with EPCRA section 313. The Form A must be submitted on an annual basis for each eligible chemical. Facilities wishing to take advantage of this burden reducing option should submit a Form A for such chemicals meeting the conditions described below, and should not submit a Form R to the EPCRA Reporting Center for that chemical. The information submitted on the Form A includes facility identification information and the chemical or chemical category identity. The information submitted on the Form A will appear in the TRI data base in the same manner that information submitted on Form R appears. An approved Form A and a magnetic version of reporting have been included in this 1997 Form and Instructions package.

### D.3 What is the total annual reportable amount?

For the purpose of this optional reporting modification, the annual reportable amount is equal to the combined total quantities released at the facility, disposed

within the facility, treated at the facility (as represented by amounts destroyed or converted by treatment processes), recovered at the facility as a result of recycle operations, combusted for the purpose of energy recovery at the facility, and amounts transferred from the facility to off-site locations for the purpose of recycle, energy recovery, treatment, and/or disposal. These volumes correspond to the sum of amounts reportable for data elements on EPA Form R (EPA Form 9350-1; Rev. 04/97) as Part II column B of section 8, data elements 8.1 (quantity released), 8.2 (quantity used for energy recovery on-site), 8.3 (quantity used for energy recovery off-site), 8.4 (quantity recycled on-site), 8.5 (quantity recycled off-site), 8.6 (quantity treated on-site), and 8.7 (quantity treated off-site).

### D.4 Recordkeeping

Each owner or operator who determines that they are eligible, and wishes to apply the alternate threshold to a particular chemical, must retain records substantiating this determination for a period of 3 years from the date of the submission of the Form A. These records must include sufficient documentation to support calculations as well as the calculations made by the facility that confirm their eligibility for each chemical for which the alternate threshold was applied.

A facility that fits within the category description, and manufactures, processes or otherwise uses no more than 1 million pounds of a listed toxic chemical annually, and whose owner/operator elects to take advantage of the alternate threshold is not considered an EPCRA section 313 covered facility for that chemical for the purpose of submitting a Form R. This determination may provide further regulatory relief from other federal or state regulations that apply to facilities on the basis of their EPCRA section 313 reporting status. A facility will need to reference other applicable regulations in order to determine if their actual requirements may be affected by this reporting modification.

### D.5 Multi-establishment facilities

For the purposes of using Form A, the facility must also make its determination based upon the entire facility's operations including all of its establishments (see 59 FR 61488 for greater detail). If the facility as a whole is able to take advantage of the alternate threshold, a single Form A is required. The eligibility to submit a Form A must be made on a whole facility determination. Thus, all of the information necessary to make the determination must be assembled to the facility level.

## D.6 Trade secrets

EPA is requiring that a facility submit a unique Form A for each toxic chemical meeting the conditions of the alternate threshold. Facilities may assert a trade secrecy claim for a chemical identity on the Form A as on the Form R. Reports submitted on a per chemical basis protect against the disclosure of trade secrets. Form A's with trade secrecy claims, like Form R's with similar claims, will be separately handled upon receipt to protect against disclosure. Commingling trade secret chemical identities with non-trade secret chemical identities on the same submission increases the risk of disclosure.

## D.7 Metals and metal compounds

For metal compounds, the category level of 500 pounds applies to the amount of parent metal waste that is reported on Form R, but the thresholds apply to the amount of metal compounds manufactured, processed, or otherwise used. For Form R reporting involving both listed parent metals and associated metal compounds, the one million pound alternate threshold must be applied separately to the listed parent metal and the associated metal compound(s). Threshold determinations must be made independently for each because they are separately listed toxic chemicals.

- If the threshold is exceeded for the listed parent metal but not the associated metal compounds, then the releases of metal reported on Form R for the parent metal should not include the releases from the metal compounds.
- If both the parent metal and the associated metal compounds exceed the alternate threshold, then the facility has the option of filing one Form R for both, using the metal compound name and reporting total releases based on parent metal content.
- If neither the parent metal nor the associated metal compounds exceed the alternate threshold, then the facility should file a Form A for each, since the reporting thresholds must be applied to each listed parent metal and each metal compound category. EPA believes it is appropriate to make this distinction between filing the Form R and Form A because the Form R accounts for amounts of metal released or otherwise managed and Form A verifies that the alternate threshold for each listed chemical or chemical category has not been exceeded.

Similarly, separate Form A's should be submitted for all other listed chemicals even if EPA allows one Form R to be filed for two or more listed chemicals, e.g., o-xylene, p-xylene and xylene (mixed isomers). For example, if a facility processes in three separate process streams, xylene (mixed isomers), o-xylene, and p-xylene, and exceeds the conditions of the alternate threshold for each of these listed substances, the facility may combine the appropriate information on the o-xylene, p-xylene, and xylene (mixed isomers) into one Form R.

Facilities that process o-xylene, p-xylene, and xylene (mixed isomers) in separate process streams and do not exceed the conditions of the alternate threshold for one or more of the compounds, may submit a separate Form A for each of the forms of xylene meeting the alternate threshold and report on Form R for those forms that do not. Similar to reporting on the parent metals and metal compounds described above, facilities that separately process all forms of xylene with individual activity levels within the conditions of the alternate threshold should file a separate Form A for each form of xylene.

The following are specific instructions for completing each part of EPA Alternate Threshold Form A. All of the data elements that appear on the Alternate Threshold Form A are a subset of and are identical to those on Form R except for the content of the statement to be signed by an authorized individual. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

## E. Instructions for Completing EPA Alternate Threshold Form A

### For all parts of Form A:

1. Type or print information on the form in the format requested. Use black ink. (Using blue ink for the certification signature is suggested as a means of indicating its originality.)
2. All information on the Form A is required.
3. Do not leave items in Parts I and II on the Form A blank unless specifically directed to do so; if an item does not apply to you, enter not applicable, NA, in the space provided. If your information does not fill all the spaces provided for a type of information, enter NA, in the next blank space in the sequence.
4. Do not submit an incomplete form. The certification statement (Part I) specifies that the report is complete as submitted. See page 1 of these instructions for the definition of a complete submission.

### Part I. Facility Identification Information

#### Section 1. Reporting Year

This is the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 1997 reporting year must be submitted on or before July 1, 1998.

#### Section 2. Trade Secret Information

##### 2.1 Are you claiming the chemical identity on page 1 trade secret?

Answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part II, Section 1, may be designated as a trade secret. If you are making a trade secret claim, mark "yes" and proceed to Section 2.2. Only check "yes" if it is your manufacturing, processing, or otherwise use of the toxic chemical whose identity is a trade secret. (See page 1 of these instructions for specific information on trade secrecy claims.) If you checked "no," proceed to Section 3; do not answer Section 2.2.

##### 2.2 If "yes" in 2.1, is this copy sanitized or unsanitized?

Answer this question only after you have completed the rest of the report. Check "sanitized" if this copy of the report is the public version which does not contain the toxic chemical identity but does contain a generic name in its place, and you have claimed the toxic chemical identity trade secret in Part I, Section 2.1. Otherwise, check "unsanitized."

#### Section 3. Certification

The Form A must be signed by the owner or operator or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the Form A. Each report must contain an original signature. Unlike the certification statement contained on Form R, the certification statement provided on the Alternate Threshold Form A pertains to the facility's eligibility of having met the conditions as described in Section D or in the Federal Register 59 FR 61488 (November 30, 1994). Print or type in the space provided the name and title of the person who signs the statement. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

#### Section 4. Facility Identification

##### 4.1 Facility Name, Location, and TRI Facility Identification Number

Enter the name of your facility (plant site name or appropriate facility designation), street address, mailing address, city, county, state, and zip code in the space provided. Do not use a post office box number as the street address. The street address provided should be the location where the toxic chemicals are manufactured, processed, or otherwise used. If your mailing address and street address are the same, enter NA in the space for the mailing address. Note that the mailing address is provided first, followed by the street address.

If you have submitted a Form R for previous reporting years, a TRI Facility Identification Number has been assigned to your facility. If you cannot locate your TRI Facility Identification Number, please contact the Emergency Planning and Community Right-to-Know Information Hotline (see page 4).

Enter "NA" in the space for the TRI Facility Identification Number if your facility has never filed a Form A (certification statement) or a Form R. If you have previously submitted a Form A (certification statement) or a Form R, use the TRI Facility Identification Number that you have been assigned. If you previously submitted a Form A (certification statement) or a Form R, but do not know what it is, contact the EPCRA Hotline (see page 4). If your facility has moved, do not enter your TRI facility identification number, enter NEW FACILITY.

## 4.2 Federal Facility Designation

On August 3, 1993, Executive Order 12856 was signed which directs federal facilities to comply with Right-To-Know Laws and Pollution Prevention Requirements. Please indicate in 4.2.C. if the reporting facility is a federal facility. If the reporting facility is not a federal facility, leave this space blank. Form R allows a facility to report multiple submissions for the same chemical if the facility is composed of several distinct establishments. This data element provides the option of reporting full or partial facility information on Form R, however, this is not applicable for those facilities taking advantage of the Alternate Threshold and using Form A. An explanation of this is provided in Section D.

## 4.3 Technical Contact

Enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on Form A. This contact person does not have to be the same person who prepares the report or signs the Form A and does not necessarily need to be someone at the location of the reporting facility; however, this person must be familiar with the details of the report so that he or she can answer questions about the information provided.

## 4.4 Intentionally Left Blank

## 4.5 Standard Industrial Classification (SIC) Code

Enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility. Table I lists the SIC codes within the 20-39 range. If the report covers more than one establishment, enter the primary 4-digit SIC code for each establishment starting with the primary SIC code for the entire facility. You are required to enter SIC codes only for those establishments within the facilities that fall within SIC codes 20 to 39. If you do not know your SIC code, consult the 1987 SIC Manual (see page 5).

The North American Industry Classification System (NAICS), is a new economic classification system that will replace the 1987 SIC code system. EPA will address the SIC code change, as it relates to EPCRA, in an upcoming Federal Register notice. This upcoming change does NOT affect the 1997 EPCRA section 313 reporting.

## 4.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. Instructions on how to determine these coordinates can be found in Appendix E. Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere. Latitude and longitude coordinates of your facility are very important for pinpointing the location of reporting facilities and are required elements on the Form A. EPA encourages facilities to make the best possible measurements when determining latitude and longitude. As with any other data field, missing, suspect, or incorrect data may generate a Notice of Technical Error to be issued to the facility. (See Appendix C: Common Errors in Completing Form R Reports).

## 4.7 Dun and Bradstreet Number

Enter the 9-digit number assigned by Dun and Bradstreet (D & B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from your local Dun and Bradstreet office (check the telephone book White

Pages). If a facility does not subscribe to the D & B service, a "support number" can be obtained from the Dun & Bradstreet center located in Allentown, Pennsylvania, at (215) 882-7748 (8:30 am to 8:00 pm, Eastern Time). If none of your establishments has been assigned a D & B number, enter not applicable, NA, in box (a). If only some of your establishments have been assigned Dun and Bradstreet numbers, enter those numbers in Part I, section 4.7.

#### **4.8 EPA Identification Number**

The EPA I.D. Number is a 12-character number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned I.D. Number. If your facility is not required to have an I.D. Number, enter not applicable, NA, in box (a). If your facility has been assigned EPA Identification Numbers, you must enter those numbers in the spaces provided in Section 4.8.

#### **4.9 NPDES Permit Number**

Enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES) even if the permit(s) do not pertain to the toxic chemical being reported. This 9-character permit number is assigned to your facility by EPA or the State under the authority of the Clean Water Act. If your facility does not have a permit, enter not applicable, NA, in Section 4.9a.

#### **4.10 Underground Injection Well Code (UIC) Identification Number**

If your facility has a permit to inject a waste containing the toxic chemical into Class 1 deep wells, enter the 12-digit Underground Injection Well Code (UIC) identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit(s), enter not applicable, NA, in Section 4.10a. You are only required to provide the UIC number for wells that receive the toxic chemical being reported.

### **Section 5. Parent Company Information**

You must provide information on your parent company. For purposes of the Form A, a parent company is defined as the highest level company, located in the United States, that directly owns at least 50 percent of the voting stock of your company. If your facility is

owned by a foreign entity, enter not applicable, NA, in this space. Corporate names should be treated as parent company names for companies with multiple facility sites. For example, the Bestchem Corporation is not owned or controlled by any other corporation but has sites throughout the country whose names begin with Bestchem. In this case, Bestchem Corporation would be listed as the parent company. Note that a facility that is a 50:50 joint venture is its own parent company.

#### **5.1 Name of Parent Company**

Enter the name of the corporation or other business entity that is your ultimate US parent company. If your facility has no parent company, check the NA box.

#### **5.2 Parent Company's Dun & Bradstreet Number**

Enter the Dun and Bradstreet Number for your ultimate US parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, check the NA box.

## Part II. Chemical Specific Information

Reporting on the Alternate Threshold Form A for metals, metal compounds, and mixed isomers differs somewhat from Form R reporting. Please refer to Section D for these guidelines.

### Section 1. Toxic Chemical Identity

#### 1.1 CAS Number

Enter the Chemical Abstracts Service (CAS) registry number in Section 1.1 exactly as it appears in Table II for the chemical being reported. CAS numbers are cross-referenced with an alphabetical list of chemical names in Table II of these instructions. If you are reporting one of the toxic chemical categories in Table II (e.g., chromium compounds), enter the applicable category code in the CAS number space. Toxic chemical category codes are listed below and can also be found in Table II.

#### Toxic Chemical Category Codes

|      |                                                           |
|------|-----------------------------------------------------------|
| N010 | Antimony compounds                                        |
| N020 | Arsenic compounds                                         |
| N040 | Barium compounds                                          |
| N050 | Beryllium compounds                                       |
| N078 | Cadmium compounds                                         |
| N084 | Chlorophenols                                             |
| N090 | Chromium compounds                                        |
| N096 | Cobalt compounds                                          |
| N100 | Copper compounds                                          |
| N106 | Cyanide compounds                                         |
| N120 | Diisocyanates                                             |
| N171 | Ethylenebisdithiocarbamic acid, salts and esters, (EBDCS) |
| N230 | Certain Glycol ethers                                     |
| N420 | Lead compounds                                            |
| N450 | Manganese compounds                                       |
| N458 | Mercury compounds                                         |
| N495 | Nickel compounds                                          |
| N503 | Nicotine and salts                                        |
| N511 | Nitrate compounds                                         |
| N575 | Polybrominated biphenyls (PBBs)                           |
| N583 | Polychlorinated alkanes                                   |
| N590 | Polycyclic aromatic compounds                             |
| N725 | Selenium compounds                                        |
| N740 | Silver compounds                                          |
| N746 | Strychnine and salts                                      |
| N760 | Thallium compounds                                        |
| N874 | Warfarin and salts                                        |
| N982 | Zinc compounds                                            |

If you are making a trade secret claim, you must report the CAS number or category code on your unsanitized Form A and unsanitized substantiation form. Do not include the CAS number or category code on your sanitized Form A or sanitized substantiation form.

#### 1.2 Toxic Chemical or Chemical Category Name

Enter the name of the toxic chemical or chemical category exactly as it appears in Table II. If the toxic chemical name is followed by a synonym in (parentheses), report the chemical by the name that directly follows the CAS number (i.e., not the synonym). If the listed toxic chemical identity is actually a product trade name (e.g., dicofol), the 9th Collective Index name is listed below it in brackets. You may report either name in this case.

Do not list the name of a chemical that does not appear in Table II, such as individual members of a reportable toxic chemical category. For example, if you use silver nitrate, do not report silver nitrate with its CAS number. Report this chemical as "silver compounds" with its category code N740.

If you are making a trade secret claim, you must report the specific toxic chemical identity on your unsanitized Form A and unsanitized substantiation form. Do not report the name of the toxic chemical on your sanitized Form A or sanitized substantiation form. Include a generic name in Part II, Section 1.3 of your sanitized Form A.

#### 1.3 Generic Chemical Name

Complete Section 1.3 only if you are claiming the specific toxic chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in Part I, Section 2.1 on page 1 of Form A. Enter a generic chemical name that is descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less. Do not enter mixture names in Section 1.3; see Section 2 on next page.

In-house plant codes and other substitute names that are not structurally descriptive of the toxic chemical identity being withheld as a trade secret are not acceptable as a generic name. The generic name must appear on both sanitized and unsanitized Form A, and the name must be the same as that used on your substantiation forms.

## **Section 2. Mixture Component Identity**

Do not complete this section if you have completed Section 1 of Part II. Report the generic name provided to you by your supplier in this section if your supplier is claiming the chemical identity proprietary or trade secret. Do not answer "yes" in Part I, Section 2.1 on page 1 of the form if you complete this section. You do not need to supply trade secret substantiation forms for this toxic chemical because it is your supplier who is claiming the chemical identity a trade secret.

### **2.1 Generic Chemical Name Provided by Supplier**

Enter the generic chemical name in this section only if the following three conditions apply:

1. You determine that the mixture contains a listed toxic chemical but the only identity you have for that chemical is a generic name;
2. You know either the specific concentration of that toxic chemical component or a maximum or average concentration level; and
3. You multiply the concentration level by the total annual amount of the whole mixture processed or otherwise used and determine that you meet the process or otherwise use threshold for that single, generically identified mixture component.

**TABLE I**

**TABLE I. SIC CODES 20-39****20 Food and Kindred Products**

2011 Meat packing plants  
 2013 Sausages and other prepared meat products  
 2015 Poultry slaughtering and processing  
 2021 Creamery butter  
 2022 Natural, processed, and imitation cheese  
 2023 Dry, condensed, and evaporated dairy products  
 2024 Ice cream and frozen desserts  
 2026 Fluid milk  
 2032 Canned specialties  
 2033 Canned fruits, vegetables, preserves, jams, and jellies  
 2034 Dried and dehydrated fruits, vegetables, and soup mixes  
 2035 Pickled fruits and vegetables, vegetable sauces and seasonings, and salad dressings  
 2037 Frozen fruits, fruit juices, and vegetables  
 2038 Frozen specialties, n.e.c.\*  
 2041 Flour and other grain mill products  
 2043 Cereal breakfast foods  
 2044 Rice milling  
 2045 Prepared flour mixes and doughs  
 2046 Wet corn milling  
 2047 Dog and cat food  
 2048 Prepared feeds and feed ingredients for animals and fowls, except dogs and cats  
 2051 Bread and other bakery products, except cookies and crackers  
 2052 Cookies and crackers  
 2053 Frozen bakery products, except bread  
 2061 Cane sugar, except refining  
 2062 Cane sugar refining  
 2063 Beet sugar  
 2064 Candy and other confectionery products  
 2066 Chocolate and cocoa products  
 2067 Chewing gum  
 2068 Salted and roasted nuts and seeds  
 2074 Cottonseed oil mills  
 2075 Soybean oil mills  
 2076 Vegetable oil mills, n.e.c.\*  
 2077 Animal and marine fats and oils

2086 Bottled and canned soft drinks and carbonated waters  
 2087 Flavoring extracts and flavoring syrups, n.e.c.\*  
 2091 Canned and cured fish and seafoods  
 2092 Prepared fresh or frozen fish and seafoods  
 2095 Roasted coffee  
 2096 Potato chips, corn chips, and similar snacks  
 2097 Manufactured ice  
 2098 Macaroni, spaghetti, vermicelli, and noodles  
 2099 Food preparations, n.e.c.\*

**21 Tobacco Products**

2111 Cigarettes  
 2121 Cigars  
 2131 Chewing and smoking tobacco and snuff  
 2141 Tobacco stemming and redrying

**22 Textile Mill Products**

2211 Broadwoven fabric mills, cotton  
 2221 Broadwoven fabric mills, manmade fiber, and silk  
 2231 Broadwoven fabric mills, wool (including dyeing and finishing)  
 2241 Narrow fabric and other smallwares mills: cotton, wool, silk, and manmade fiber  
 2251 Women's full length and knee length hosiery, except socks  
 2252 Hosiery, n.e.c.\*  
 2253 Knit outerwear mills  
 2254 Knit underwear and nightwear mills  
 2257 Weft knit fabric mills  
 2258 Lace and warp knit fabric mills  
 2259 Knitting mills, n.e.c.\*  
 2261 Finishers of broadwoven fabrics of cotton  
 2262 Finishers of broadwoven fabrics of manmade fiber and silk  
 2269 Finishers of textiles, n.e.c.\*  
 2273 Carpets and rugs  
 2281 Yarn spinning mills  
 2282 Yarn texturizing, throwing, twisting, and winding mills

- 2325 Men's and boys' separate trousers and slacks
- 2326 Men's and boys' work clothing
- 2329 Men's and boys' clothing, n.e.c.\*
- 2331 Women's, misses', and juniors' blouses and shirts
- 2335 Women's, misses', and juniors' dresses
- 2337 Women's, misses', and juniors' suits, skirts, and coats
- 2339 Women's, misses', and juniors', outerwear, n.e.c.\*
- 2341 Women's, misses', children's, and infants' underwear and nightwear
- 2342 Brassieres, girdles, and allied garments
- 2353 Hats, caps, and millinery
- 2361 Girls', children's and infants' dresses, blouses, and shirts
- 2369 Girls', children's and infants' outerwear, n.e.c.\*
- 2371 Fur goods
- 2381 Dress and work gloves, except knit and all leather
- 2384 Robes and dressing gowns
- 2385 Waterproof outerwear
- 2386 Leather and sheep lined clothing
- 2387 Apparel belts
- 2389 Apparel and accessories, n.e.c.\*
- 2391 Curtains and draperies
- 2392 Housefurnishings, except curtains and draperies
- 2393 Textile bags
- 2394 Canvas and related products
- 2395 Pleating, decorative and novelty stitching, and tucking for the trade
- 2396 Automotive trimmings, apparel findings, and related products
- 2397 Schiffli machine embroideries
- 2399 Fabricated textile products, n.e.c.\*

## **24 Lumber and Wood Products, Except Furniture**

- 2411 Logging
- 2421 Sawmills and planing mills, general
- 2426 Hardwood dimension and flooring mills

2449 Wood containers, n.e.c.

- 2451 Mobile homes
- 2452 Prefabricated wood buildings and components
- 2491 Wood preserving
- 2493 Reconstituted wood products
- 2499 Wood products, n.e.c.\*

## **25 Furniture and Fixtures**

- 2511 Wood household furniture, except upholstered
- 2512 Wood household furniture, upholstered
- 2514 Metal household furniture
- 2515 Mattresses, foundations, and convertible beds
- 2517 Wood television, radio, phonograph, and sewing machine cabinets
- 2519 Household furniture, n.e.c.\*
- 2521 Wood office furniture
- 2522 Office furniture, except wood
- 2531 Public building and related furniture
- 2541 Wood office and store fixtures, partitions, shelving, and lockers
- 2542 Office and store fixtures, partitions, shelving, and lockers, except wood
- 2591 Drapery hardware and window blinds and shades
- 2599 Furniture and fixtures, n.e.c.\*

## **26 Paper and Allied Products**

- 2611 Pulp mills
- 2621 Paper mills
- 2631 Paperboard mills
- 2652 Setup paperboard boxes
- 2653 Corrugated and solid fiber boxes
- 2655 Fiber cans, tubes, drums, and similar products
- 2656 Sanitary food containers, except folding
- 2657 Folding paperboard boxes, including sanitary
- 2671 Packaging paper and plastics film, coated and laminated
- 2672 Coated and laminated paper, n.e.c.\*
- 2673 Plastics, foil, and coated paper bags
- 2674 Uncoated paper and multiwall bags
- 2675 Die-cut paper and paperboard and cardboard

- 2676 Sanitary paper products
- 2677 Envelopes
- 2678 Stationery tablets, and related products
- 2679 Converted paper and paperboard products, n.e.c.\*

## **27 Printing, Publishing, and Allied Industries**

- 2711 Newspapers: publishing, or publishing and printing
- 2721 Periodicals: publishing, or publishing and printing
- 2731 Books: publishing, or publishing and printing
- 2732 Book printing
- 2741 Miscellaneous publishing
- 2752 Commercial printing, lithographic
- 2754 Commercial printing, gravure
- 2759 Commercial printing, n.e.c.\*
- 2761 Manifold business forms
- 2771 Greeting cards
- 2782 Blankbooks, looseleaf binders and devices
- 2789 Bookbinding and related work
- 2791 Typesetting
- 2796 Platemaking and related services

## **28 Chemicals and Allied Products**

- 2812 Alkalies and chlorine
- 2813 Industrial gases
- 2816 Inorganic pigments
- 2819 Industrial inorganic chemicals, n.e.c.\*
- 2821 Plastics materials, synthetic resins, and non-vulcanizable elastomers
- 2822 Synthetic rubber (vulcanizable elastomers)
- 2823 Cellulosic manmade fibers
- 2824 Manmade organic fibers, except cellulosic
- 2833 Medicinal chemicals and botanical products
- 2834 Pharmaceutical preparations
- 2835 In vitro and in vivo diagnostic substances
- 2836 Biological products, except diagnostic substances

- 2851 Paints, varnishes, lacquers, enamels, and allied products
- 2861 Gum and wood chemicals
- 2865 Cyclic organic crudes and intermediates, and organic dyes and pigments
- 2869 Industrial organic chemicals, n.e.c.\*
- 2873 Nitrogenous fertilizers
- 2874 Phosphatic fertilizers
- 2875 Fertilizers, mixing only
- 2879 Pesticides and agricultural chemicals, n.e.c.\*
- 2891 Adhesives and sealants
- 2892 Explosives
- 2893 Printing ink
- 2895 Carbon black
- 2899 Chemicals and chemical preparations, n.e.c.\*

## **29 Petroleum Refining and Related Industries**

- 2911 Petroleum refining
- 2951 Asphalt paving mixtures and blocks
- 2952 Asphalt felts and coatings
- 2992 Lubricating oils and greases
- 2999 Products of petroleum and coal, n.e.c.\*

## **30 Rubber and Miscellaneous Plastics Products**

- 3011 Tires and inner tubes
- 3021 Rubber and plastics footwear
- 3052 Rubber and plastics hose and belting
- 3053 Gaskets, packing, and sealing devices
- 3061 Molded, extruded, and lathecut mechanical rubber products
- 3069 Fabricated rubber products, n.e.c.\*
- 3081 Unsupported plastics film and sheet
- 3082 Unsupported plastics profile shapes
- 3083 Laminated plastics plate, sheet, and profile shapes
- 3084 Plastics pipe
- 3085 Plastics bottles
- 3086 Plastics foam products

- 3151 Leather gloves and mittens
- 3161 Luggage
- 3171 Women's handbags and purses
- 3172 Personal leather goods, except women's handbags and purses
- 3199 Leather goods, n.e.c.\*

## **32 Stone, Clay, Glass and Concrete Products**

- 3211 Flat glass
- 3221 Glass containers
- 3229 Pressed and blown glass and glassware, n.e.c.\*
- 3231 Glass products, made of purchased glass
- 3241 Cement, hydraulic
- 3251 Brick and structural clay tile
- 3253 Ceramic wall and floor tile
- 3255 Clay refractories
- 3259 Structural clay products, n.e.c.\*
- 3261 Vitreous china plumbing fixtures and china and earthenware fittings and bathroom accessories
- 3262 Vitreous china table and kitchen articles
- 3263 Fine earthenware (whiteware) table and kitchen articles
- 3264 Porcelain electrical supplies
- 3269 Pottery products, n.e.c.\*
- 3271 Concrete block and brick
- 3272 Concrete products, except block and brick
- 3273 Ready mixed concrete
- 3274 Lime
- 3275 Gypsum products
- 3281 Cut stone and stone products
- 3291 Abrasive products
- 3292 Asbestos products
- 3295 Minerals and earths, ground or otherwise treated
- 3296 Mineral wool
- 3297 Nonclay refractories
- 3299 Nonmetallic mineral products, n.e.c.\*

- 3321 Gray and ductile iron foundries
- 3322 Malleable iron foundries
- 3324 Steel investment foundries
- 3325 Steel foundries, n.e.c.\*
- 3331 Primary smelting and refining of copper
- 3334 Primary production of aluminum
- 3339 Primary smelting and refining of nonferrous metals, except copper and aluminum
- 3341 Secondary smelting and refining of nonferrous metals
- 3351 Rolling, drawing, and extruding of copper
- 3353 Aluminum sheet, plate, and foil
- 3354 Aluminum extruded products
- 3355 Aluminum rolling and drawing, n.e.c.\*
- 3356 Rolling, drawing, and extruding of nonferrous metals, except copper and aluminum
- 3357 Drawing and insulating of nonferrous wire
- 3363 Aluminum die-castings
- 3364 Nonferrous die-castings, except aluminum
- 3365 Aluminum foundries
- 3366 Copper foundries
- 3369 Nonferrous foundries, except aluminum and copper
- 3398 Metal heat treating
- 3399 Primary metal products, n.e.c.\*

## **34 Fabricated Metal Products, except Machinery and Transportation Equipment**

- 3411 Metal cans
- 3412 Metal shipping barrels, drums, kegs, and pails
- 3421 Cutlery
- 3423 Hand and edge tools, except machine tools and handsaws
- 3425 Handsaws and saw blades
- 3429 Hardware, n.e.c.\*
- 3431 Enameled iron and metal sanitary ware
- 3432 Plumbing fixture fittings and trim
- 3433 Heating equipment, except electric and warm air furnaces
- 3441 Fabricated structural metal
- 3442 Metal doors, sash, frames, molding, and trim
- 3443 Fabricated plate work (boiler shops)

- 3444 Sheet metal work
- 3446 Architectural and ornamental metal work
- 3448 Prefabricated metal buildings and components
- 3449 Miscellaneous structural metal work
- 3451 Screw machine products
- 3452 Bolts, nuts, screws, rivets, and washers
- 3462 Iron and steel forgings
- 3463 Nonferrous forgings
- 3465 Automotive stampings
- 3468 Crowns and closures
- 3469 Metal stampings, n.e.c.\*
- 3471 Electroplating, plating, polishing, anodizing, and coloring
- 3479 Coating, engraving and allied services, n.e.c.\*
- 3482 Small arms ammunition
- 3483 Ammunition, except for small arms
- 3484 Small arms
- 3489 Ordnance and accessories, n.e.c.\*
- 3491 Industrial valves
- 3492 Fluid power valves and hose fittings
- 3493 Steel springs, except wire
- 3494 Valves and pipe fittings, n.e.c.\*
- 3495 Wire springs
- 3496 Miscellaneous fabricated wire products
- 3497 Metal foil and leaf
- 3498 Fabricated pipe and pipe fittings
- 3499 Fabricated metal products, n.e.c.\*

### **35 Industrial and Commercial Machinery and Computer Equipment**

- 3511 Steam, gas and hydraulic turbines, and turbine generator set units
- 3519 Internal combustion engines, n.e.c.\*
- 3523 Farm machinery and equipment
- 3524 Lawn and garden tractors and home lawn and garden equipment
- 3531 Construction machinery and equipment
- 3532 Mining machinery and equipment, except oil and gas field machinery and equipment
- 3533 Oil and gas field machinery and equipment
- 3534 Elevators and moving stairways
- 3535

- 3545 Cutting tools, machine tool accessories, and machinists' measuring devices
- 3546 Power driven handtools
- 3547 Rolling mill machinery and equipment
- 3548 Electric and gas welding and soldering equipment
- 3549 Metalworking machinery, n.e.c.\*
- 3552 Textile machinery
- 3553 Woodworking machinery
- 3554 Paper industries machinery
- 3555 Printing trades machinery and equipment
- 3556 Food products machinery
- 3559 Special industry machinery, n.e.c.\*
- 3561 Pumps and pumping equipment
- 3562 Ball and roller bearings
- 3563 Air and gas compressors
- 3564 Industrial and commercial fans and blowers and air purification equipment
- 3565 Packaging equipment
- 3566 Speed changers, industrial high speed drives, and gears
- 3567 Industrial process furnaces and ovens
- 3568 Mechanical power transmission equipment, n.e.c.\*
- 3569 General industrial machinery and equipment, n.e.c.\*
- 3571 Electronic computers
- 3572 Computer storage devices
- 3575 Computer terminals
- 3577 Computer peripheral equipment, n.e.c.\*
- 3578 Calculating and accounting machines, except electronic computers
- 3579 Office machines, n.e.c.\*
- 3581 Automatic vending machines
- 3582 Commercial laundry, drycleaning, and pressing machines
- 3585 Air conditioning and warm air heating equipment and commercial and industrial refrigeration equipment
- 3586 Measuring and dispensing pumps
- 3589 Service industry machinery, n.e.c.\*
- 3592 Carburetors, pistons, piston rings, and valves
- 3593 Fluid power cylinders and actuators

## 3621 Motors and generators

- 3624 Carbon and graphite products
- 3625 Relays and industrial controls
- 3629 Electrical industrial appliances, n.e.c.\*
- 3631 Household cooking equipment
- 3632 Household refrigerators and home and farm freezers
- 3633 Household laundry equipment
- 3634 Electrical housewares and fans
- 3635 Household vacuum cleaners
- 3639 Household appliances, n.e.c.\*
- 3641 Electric lampbulbs and tubes
- 3643 Current carrying wiring devices
- 3644 Noncurrent carrying wiring devices
- 3645 Residential electric lighting fixtures
- 3646 Commercial, industrial, and institutional electric lighting fixtures
- 3647 Vehicular lighting equipment
- 3648 Lighting equipment, n.e.c.\*
- 3651 Household audio and video equipment
- 3652 Phonograph records and pre-recorded audio tapes and disks
- 3661 Telephone and telegraph apparatus
- 3663 Radio and television broadcasting and communications equipment
- 3669 Communications equipment, n.e.c.\*
- 3671 Electron tubes
- 3672 Printed circuit boards
- 3674 Semiconductors and related devices
- 3675 Electronic capacitors
- 3676 Electronic resistors
- 3677 Electronic coils, transformers, and other inductors
- 3678 Electronic connectors
- 3679 Electronic components, n.e.c.\*
- 3691 Storage batteries
- 3692 Primary batteries, dry and wet
- 3694 Electric equipment for internal combustion engines
- 3695 Magnetic and optical recording media
- 3699 Electrical machinery, equipment, and supplies, n.e.c.\*

- 3724 Aircraft engines and engine parts
- 3728 Aircraft parts and auxiliary equipment, n.e.c.\*
- 3731 Ship building and repairing
- 3732 Boat building and repairing
- 3743 Railroad equipment
- 3751 Motorcycles, bicycles and parts
- 3761 Guided missiles and space vehicles
- 3764 Guided missile and space vehicle propulsion units and propulsion unit parts
- 3769 Guided missile and space vehicle parts and auxiliary equipment, n.e.c.\*
- 3792 Travel trailers and campers
- 3795 Tanks and tank components
- 3799 Transportation equipment, n.e.c.\*

### 38 Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks

- 3812 Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments
- 3821 Laboratory apparatus and furniture
- 3822 Automatic controls for regulating residential and commercial environments and appliances
- 3823 Industrial instruments for measurement, display, and control of process variables; and related products
- 3824 Totalizing fluid meters and counting devices
- 3825 Instruments for measuring and testing of electricity and electrical signals
- 3826 Laboratory analytical instruments
- 3827 Optical instruments and lenses
- 3829 Measuring and controlling devices, n.e.c.\*
- 3841 Surgical and medical instruments and apparatus
- 3842 Orthopedic, prosthetic, and surgical appliances and supplies
- 3843 Dental equipment and supplies
- 3844 X-ray apparatus and tubes and related irradiation apparatus

- 3845 Electromedical and electrotherapeutic apparatus
- 3851 Ophthalmic goods
- 3861 Photographic equipment and supplies
- 3873 Watches, clocks, clockwork operated devices, and parts

### **39 Miscellaneous Manufacturing Industries**

- 3911 Jewelry, precious metal
- 3914 Silverware, plated ware, and stainless steel ware
- 3915 Jewelers' findings and materials, and lapidary work
- 3931 Musical instruments
- 3942 Dolls and stuffed toys
- 3944 Games, toys and children's vehicles; except dolls and bicycles
- 3949 Sporting and athletic goods, n.e.c.\*
- 3951 Pens, mechanical pencils, and parts
- 3952 Lead pencils, crayons, and artists' materials
- 3953 Marking devices
- 3955 Carbon paper and inked ribbons
- 3961 Costume jewelry and costume novelties, except precious metal
- 3965 Fasteners, buttons, needles, and pins
- 3991 Brooms and brushes
- 3993 Signs and advertising specialties
- 3995 Burial caskets
- 3996 Linoleum, asphalted-felt-base, and other hard surface floor coverings, n.e.c.\*
- 3999 Manufacturing industries, n.e.c.\*

## TABLE II

## TABLE II. SECTION 313 TOXIC CHEMICAL LIST FOR REPORTING YEAR 1997 (including Toxic Chemical Categories)

Specific toxic chemicals with CAS Numbers are listed in alphabetical starting on page II-3. A list of the same chemicals in CAS Number order begins at the end of the alphabetical list of toxic chemicals. Covered chemical categories follow.

Certain toxic chemicals listed in Table II have parenthetical "qualifiers." These qualifiers indicate that these toxic chemicals are subject to the section 313 reporting requirements if manufactured, processed, or otherwise used in a specific form or when a certain activity is performed. The following chemicals are reportable only if they are manufactured, processed, or otherwise used in the specific form(s) listed below:

| <u>Chemical</u>                                                                                                                                                                        | <u>CAS Number</u> | <u>Qualifier</u>                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------|
| Aluminum (fume or dust)                                                                                                                                                                | 7429-90-5         | <u>Only</u> if it is in a fume or dust form.                                |
| Aluminum oxide (fibrous forms)                                                                                                                                                         | 1344-28-1         | <u>Only</u> if it is a fibrous form.                                        |
| Ammonia (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing) | 7664-41-7         | <u>Only</u> 10 percent of aqueous forms.<br>100 percent of anhydrous forms. |
| Asbestos (friable)                                                                                                                                                                     | 1332-21-4         | <u>Only</u> if it is a friable form.                                        |
| Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)                                                                     | 7647-01-0         | <u>Only</u> if it is an aerosol form as defined.                            |
| Phosphorus (yellow or white)                                                                                                                                                           | 7723-14-0         | <u>Only</u> if it is a yellow or white form.                                |
| Sulfuric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)                                                                         | 7664-93-9         | <u>Only</u> if it is an aerosol form as defined.                            |
| Vanadium (fume or dust)                                                                                                                                                                | 7440-62-2         | <u>Only</u> if it is in a fume or dust form.                                |
| Zinc (fume or dust)                                                                                                                                                                    | 7440-66-6         | <u>Only</u> if it is in a fume or dust form.                                |

The qualifier for the following two chemicals is based on the chemical activity rather than the form of the chemical. These chemicals are subject to EPCRA section 313 reporting requirements only when the indicated activity is performed.

| <u>Chemical</u>                                                                   | <u>CAS Number</u> | <u>Qualifier</u>                                                    |
|-----------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------|
| Isopropyl alcohol (manufacturing - strong acid process, no supplier notification) | 67-63-0           | <u>Only</u> if it is being manufactured by the strong acid process. |
| Saccharin (manufacturing, no supplier notification)                               | 81-07-2           | <u>Only</u> if it is being manufactured.                            |

There are no supplier notification requirements for isopropyl alcohol and saccharin since the processors and users of these chemicals are not required to report. Manufacturers of these chemicals do not need to notify their customers that these are reportable EPCRA section 313 chemicals.

[Note: Chemicals may be added to or deleted from the list. The Emergency Planning and Community Right-to-Know Information Hotline, (800) 535-0202, (800) 424-9346 or (703) 412-9877, will provide up-to-date information on the status of these changes. See section B.4.b of the instructions for more information on the de minimis values listed below.]

## Chemical Qualifiers

This table contains the list of individual toxic chemicals and categories of chemicals subject to 1997 calendar year reporting. Some of the toxic chemicals listed in this have parenthetical qualifiers listed next to them. A toxic chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and otherwise used.

**Fume or dust.** Three of the metals on the list (aluminum, vanadium, and zinc) contain the qualifier "fume or dust." Fume or dust refers to dry forms of these metals but does not refer to "wet" forms such as solutions or slurries. As explained in Section B.3.a of these instructions, the term manufacture includes the generation of a toxic chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than 25,000 pounds of aluminum fume or dust in 1997 as a result of its activities. If so, the facility must report that it manufactures "aluminum (fume or dust)." Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other toxic chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

EPA considers dusts to consist of solid particles generated by any mechanical processing of materials including crushing, grinding, rapid impact, handling, detonation, and decrepitation of organic and inorganic materials such as rock, ore, and metal. Dusts do not tend to flocculate, except under electrostatic forces. A fume is an airborne dispersion consisting of small solid particles created by condensation from a gaseous state, in distinction to a gas or vapor. Fumes arise from the heating of solids such as lead. The condensation is often accompanied by a chemical reaction, such as oxidation. Fumes flocculate and sometimes coalesce.

**Manufacturing qualifiers.** Two of the entries to the section 313 toxic chemical list contain a qualifier relating to manufacture. For isopropyl alcohol, the qualifier is "manufacturing — strong acid process." For saccharin, the qualifier simply is "manufacturing." For isopropyl alcohol, the qualifier means that only facilities manufacturing isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of the toxic chemical are subject to the reporting requirements. A facility that processes or otherwise uses either toxic chemical would not be required to report for those toxic chemicals. In both cases, supplier notification does not apply because only manufacturers, not users, of the toxic chemical must report.

**Ammonia** (includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing). The qualifier for ammonia means that anhydrous forms of ammonia are 100 percent reportable and aqueous forms are limited to 10 percent of total aqueous ammonia. Therefore when determining threshold and releases and other waste management quantities all anhydrous ammonia is included but only 10 percent of total aqueous ammonia is included. Any evaporation of ammonia from aqueous ammonia solutions is considered anhydrous ammonia and should be included in threshold and release determinations.

**Sulfuric acid and Hydrochloric acid (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size).** The qualifier for sulfuric acid and hydrochloric acid means that the only forms of this chemical that are reportable are aerosols. Aqueous solutions are not covered by this listing but any aerosols generated from aqueous solutions are covered.

**Nitrate compounds (water dissociable; reportable only when in aqueous solution).** The qualifier for the nitrate compounds category limits the reporting to nitrate compounds that dissociate in water, generating nitrate ion. For the purposes of threshold determinations the entire weight of the nitrate compound must be included in all calculations. For the purposes of reporting releases and other waste management quantities only the weight of the nitrate ion should be included in the calculations of these quantities.

**Phosphorus (yellow or white).** The listing for phosphorus is qualified by the term "yellow or white." This means that only manufacturing, processing, or otherwise use of phosphorus in the yellow or white chemical form triggers reporting. Conversely, manufacturing, processing, or otherwise use of "black" or "red" phosphorus does not trigger reporting. Supplier notification also applies only to distribution of yellow or white phosphorus.

**Asbestos (friable).** The listing for asbestos is qualified by the term "friable," referring to the physical characteristic of being able to be crumbled, pulverized, or reducible to a powder with hand pressure. Only manufacturing, processing, or otherwise use of asbestos in the friable form triggers reporting. Supplier notification applies only to distribution of mixtures or trade name products containing friable asbestos.

**Aluminum Oxide (fibrous forms).** The listing for aluminum oxide is qualified by the term "fibrous forms." Fibrous refers to a man-made form of aluminum oxide that is processed to produce strands or filaments which can be cut to various lengths depending on the application. Only manufacturing, processing, or otherwise use of aluminum oxide in the fibrous form triggers reporting. Supplier notification applies only to distribution of mixtures or trade name products containing fibrous forms of aluminum oxide.

#### a. Alphabetical List of TRI Chemicals

| CAS Number | Chemical Name                                                                                                                                                                             | De Minimis Concentration |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 92-67-1    | 4-Aminobiphenyl                                                                                                                                                                           | 0.1                      |
| 82-28-0    | 1-Amino-2-methylantraquinone                                                                                                                                                              | 0.1                      |
| 33089-61-1 | Amitraz                                                                                                                                                                                   | 1.0                      |
| 61-82-5    | Amitrole                                                                                                                                                                                  | 0.1                      |
| 7664-41-7  | Ammonia<br>(includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing) | 1.0                      |
| 101-05-3   | Anilazine<br>[4,6-Dichloro-N-(2-chlorophenyl)-1,3,5-triazine-2-amine]                                                                                                                     | 1.0                      |
| 71751-41-2 | Abamectin [Avermectin B1]                                                                                                                                                                 | 1.0                      |
| 30560-19-1 | Acephate<br>(Acetylphosphoramidothioic acid O,S-dimethyl ester)                                                                                                                           | 1.0                      |
| 75-07-0    | Acetaldehyde                                                                                                                                                                              | 0.1                      |
| 60-35-5    | Acetamide                                                                                                                                                                                 | 0.1                      |
| 75-05-8    | Acetonitrile                                                                                                                                                                              | 1.0                      |
| 98-86-2    | Acetophenone                                                                                                                                                                              | 1.0                      |
| 53-96-3    | 2-Acetylaminofluorene                                                                                                                                                                     | 0.1                      |
| 62476-59-9 | Acifluorfen, sodium salt<br>[5-(2-Chloro-4-(trifluoromethyl)-phenoxy)-2-nitrobenzoic acid, sodium salt]                                                                                   | 1.0                      |
| 107-02-8   | Acrolein                                                                                                                                                                                  | 1.0                      |
| 79-06-1    | Acrylamide                                                                                                                                                                                | 0.1                      |
| 79-10-7    | Acrylic acid                                                                                                                                                                              | 1.0                      |
| 107-13-1   | Acrylonitrile                                                                                                                                                                             | 0.1                      |
| 15972-60-8 | Alachlor                                                                                                                                                                                  | 1.0                      |
| 116-06-3   | Aldicarb                                                                                                                                                                                  | 1.0                      |
| 309-00-2   | Aldrin<br>[1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]                                       | 1.0                      |
| 28057-48-9 | d-trans-Allethrin<br>[d-trans-Chrysanthemic acid of d-allethrine]                                                                                                                         | 1.0                      |
| 107-18-6   | Allyl alcohol                                                                                                                                                                             | 1.0                      |
| 107-11-9   | Allylamine                                                                                                                                                                                | 1.0                      |
| 107-05-1   | Allyl chloride                                                                                                                                                                            | 1.0                      |
| 7429-90-5  | Aluminum (fume or dust)                                                                                                                                                                   | 1.0                      |
| 20859-73-8 | Aluminum phosphide                                                                                                                                                                        | 1.0                      |
| 1344-28-1  | Aluminum oxide (fibrous forms)                                                                                                                                                            | 1.0                      |
| 834-12-8   | Ametryn<br>(N-Ethyl-N'-(1-methylethyl)-6-(methylthio)-1,3,5-triazine-2,4-diamine)                                                                                                         | 1.0                      |
| 117-79-3   | 2-Aminoanthraquinone                                                                                                                                                                      | 0.1                      |
| 60-09-3    | 4-Aminoazobenzene                                                                                                                                                                         | 0.1                      |
| 62-53-3    | Aniline                                                                                                                                                                                   | 1.0                      |
| 90-04-0    | o-Anisidine                                                                                                                                                                               | 0.1                      |
| 104-94-9   | p-Anisidine                                                                                                                                                                               | 1.0                      |
| 134-29-2   | o-Anisidine hydrochloride                                                                                                                                                                 | 0.1                      |
| 120-12-7   | Anthracene                                                                                                                                                                                | 1.0                      |
| 7440-36-0  | Antimony                                                                                                                                                                                  | 1.0                      |
| 7440-38-2  | Arsenic                                                                                                                                                                                   | 0.1                      |
| 1332-21-4  | Asbestos (friable)                                                                                                                                                                        | 0.1                      |
| 1912-24-9  | Atrazine<br>(6-Chloro-N-ethyl-N'-(1-methylethyl)-1,3,5-triazine-2,4-diamine)                                                                                                              | 0.1                      |
| 7440-39-3  | Barium                                                                                                                                                                                    | 1.0                      |
| 22781-23-3 | Bendiocarb<br>[2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate]                                                                                                                         | 1.0                      |
| 1861-40-1  | Benfluralin<br>(N-Butyl-N-ethyl-2,6-dinitro-4-(trifluoromethyl)-benzenamine)                                                                                                              | 1.0                      |
| 17804-35-2 | Benomyl                                                                                                                                                                                   | 1.0                      |
| 98-87-3    | Benzal chloride                                                                                                                                                                           | 1.0                      |
| 55-21-0    | Benzamide                                                                                                                                                                                 | 1.0                      |
| 71-43-2    | Benzene                                                                                                                                                                                   | 0.1                      |
| 92-87-5    | Benzidine                                                                                                                                                                                 | 0.1                      |
| 98-07-7    | Benzoic trichloride<br>(Benzotrichloride)                                                                                                                                                 | 0.1                      |
| 98-88-4    | Benzoyl chloride                                                                                                                                                                          | 1.0                      |
| 94-36-0    | Benzoyl peroxide                                                                                                                                                                          | 1.0                      |
| 100-44-7   | Benzyl chloride                                                                                                                                                                           | 1.0                      |
| 7440-41-7  | Beryllium                                                                                                                                                                                 | 0.1                      |
| 82657-04-3 | Bifenthrin                                                                                                                                                                                | 1.0                      |
| 92-52-4    | Biphenyl                                                                                                                                                                                  | 1.0                      |
| 111-91-1   | Bis(2-chloroethoxy) methane                                                                                                                                                               | 1.0                      |
| 111-44-4   | Bis(2-chloroethyl) ether                                                                                                                                                                  | 1.0                      |

\*C.I. means "Color Index"

| CAS Number | Chemical Name                                                                   | De Minimis Concentration | CAS Number | Chemical Name                                                                          | De Minimis Concentration |
|------------|---------------------------------------------------------------------------------|--------------------------|------------|----------------------------------------------------------------------------------------|--------------------------|
| 542-88-1   | Bis(chloromethyl) ether                                                         | 0.1                      | 5234-68-4  | Carboxin                                                                               | 1.0                      |
| 108-60-1   | Bis(2-chloro-1-methylethyl)-ether                                               | 1.0                      |            | (5,6-Dihydro-2-methyl-N-phenyl-1,4-oxathiin-3-carboxamide)                             |                          |
| 56-35-9    | Bis(tributyltin) oxide                                                          | 1.0                      | 120-80-9   | Catechol                                                                               | 1.0                      |
| 10294-34-5 | Boron trichloride                                                               | 1.0                      | 2439-01-2  | Chinomethionat                                                                         | 1.0                      |
| 7637-07-2  | Boron trifluoride                                                               | 1.0                      |            | [6-Methyl-1,3-dithiolo[4,5-b]quinoxalin-2-one]                                         |                          |
| 314-40-9   | Bromacil                                                                        | 1.0                      | 133-90-4   | Chloramben                                                                             | 1.0                      |
|            | (5-Bromo-6-methyl-3-(1-methylpropyl)-2,4(1H,3H)-pyrimidinedione)                |                          |            | [Benzoic acid, 3-amino-2,5-dichloro-]                                                  |                          |
| 53404-19-6 | Bromacil, lithium salt                                                          | 1.0                      | 57-74-9    | Chlordane                                                                              | 0.1                      |
|            | [2,4(1H,3H)-Pyrimidinedione, 5-bromo-6-methyl-3-(1-methylpropyl), lithium salt] |                          |            | [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]                |                          |
| 7726-95-6  | Bromine                                                                         | 1.0                      | 115-28-6   | Chlorendic acid                                                                        | 0.1                      |
| 35691-65-7 | 1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile                               | 1.0                      | 90982-32-4 | Chlorimuron ethyl                                                                      | 1.0                      |
| 353-59-3   | Bromochlorodifluoromethane (Halon 1211)                                         | 1.0                      |            | [Ethyl-2-[[[(4-chloro-6-methoxyprimidin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate]   |                          |
| 75-25-2    | Bromoform (Tribromomethane)                                                     | 1.0                      | 7782-50-5  | Chlorine                                                                               | 1.0                      |
| 74-83-9    | Bromomethane (Methyl bromide)                                                   | 1.0                      | 10049-04-4 | Chlorine dioxide                                                                       | 1.0                      |
| 75-63-8    | Bromotrifluoromethane (Halon 1301)                                              | 1.0                      | 79-11-8    | Chloroacetic acid                                                                      | 1.0                      |
| 1689-84-5  | Bromoxynil                                                                      | 1.0                      | 532-27-4   | 2-Chloroacetophenone                                                                   | 1.0                      |
|            | (3,5-Dibromo-4-hydroxybenzonitrile)                                             |                          | 4080-31-3  | 1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride                             | 1.0                      |
| 1689-99-2  | Bromoxynil octanoate                                                            | 1.0                      | 106-47-8   | p-Chloroaniline                                                                        | 0.1                      |
|            | (Octanoic acid, 2,6-dibromo-4-cyanophenylester)                                 |                          | 108-90-7   | Chlorobenzene                                                                          | 1.0                      |
| 357-57-3   | Brucine                                                                         | 1.0                      | 510-15-6   | Chlorobenzilate                                                                        | 1.0                      |
| 106-99-0   | 1,3-Butadiene                                                                   | 0.1                      |            | [Benzeneacetic acid, 4-chloro-.alpha.- (4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester] |                          |
| 141-32-2   | Butyl acrylate                                                                  | 1.0                      | 75-68-3    | 1-Chloro-1,1-difluoroethane                                                            | 1.0                      |
| 71-36-3    | n-Butyl alcohol                                                                 | 1.0                      |            | (HCFC-142b)                                                                            |                          |
| 78-92-2    | sec-Butyl alcohol                                                               | 1.0                      | 75-45-6    | Chlorodifluoromethane                                                                  | 1.0                      |
| 75-65-0    | tert-Butyl alcohol                                                              | 1.0                      |            | (HCFC-22)                                                                              |                          |
| 106-88-7   | 1,2-Butylene oxide                                                              | 1.0                      | 75-00-3    | Chloroethane (Ethyl chloride)                                                          | 1.0                      |
| 123-72-8   | Butyraldehyde                                                                   | 1.0                      | 67-66-3    | Chloroform                                                                             | 0.1                      |
| 7440-43-9  | Cadmium                                                                         | 0.1                      | 74-87-3    | Chloromethane (Methyl chloride)                                                        | 1.0                      |
| 156-62-7   | Calcium cyanamide                                                               | 1.0                      | 107-30-2   | Chloromethyl methyl ether                                                              | 0.1                      |
| 133-06-2   | Captan                                                                          | 1.0                      | 563-47-3   | 3-Chloro-2-methyl-1-propene                                                            | 0.1                      |
|            | [1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]   |                          | 104-12-1   | p-Chlorophenyl isocyanate                                                              | 1.0                      |
| 63-25-2    | Carbaryl [1-Naphthalenol, methylcarbamate]                                      | 1.0                      | 76-06-2    | Chloropicrin                                                                           | 1.0                      |
| 1563-66-2  | Carbofuran                                                                      | 1.0                      | 126-99-8   | Chloroprene                                                                            | 1.0                      |
| 75-15-0    | Carbon disulfide                                                                | 1.0                      | 542-76-7   | 3-Chloropropionitrile                                                                  | 1.0                      |
| 56-23-5    | Carbon tetrachloride                                                            | 0.1                      | 63938-10-3 | Chlorotetrafluoroethane                                                                | 1.0                      |
| 463-58-1   | Carbonyl sulfide                                                                | 1.0                      | 354-25-6   | 1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)                                         | 1.0                      |

| CAS Number | Chemical Name                                                                           | De Minimis Concentration | CAS Number | Chemical Name                                                                                                         | De Minimis Concentration |
|------------|-----------------------------------------------------------------------------------------|--------------------------|------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------|
| 2837-89-0  | 2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)                                           | 1.0                      | 21725-46-2 | Cyanazine                                                                                                             | 1.0                      |
| 1897-45-6  | Chlorothalonil                                                                          | 1.0                      | 1134-23-2  | Cycloate                                                                                                              | 1.0                      |
|            | [1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-]                                       |                          | 110-82-7   | Cyclohexane                                                                                                           | 1.0                      |
| 95-69-2    | p-Chloro-o-toluidine                                                                    | 0.1                      | 108-93-0   | Cyclohexanol                                                                                                          | 1.0                      |
| 75-88-7    | 2-Chloro-1,1,1-trifluoroethane (HCFC-133a)                                              | 1.0                      | 68359-37-5 | Cyfluthrin                                                                                                            | 1.0                      |
| 75-72-9    | Chlorotrifluoromethane (CFC-13)                                                         | 1.0                      |            | [3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl) methyl ester]       |                          |
| 460-35-5   | 3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)                                            | 1.0                      | 68085-85-8 | Cyhalothrin                                                                                                           | 1.0                      |
| 5598-13-0  | Chlorpyrifos methyl [O,O-Dimethyl-O-(3,5,6-trichloro-2-pyridyl)phosphorothioate]        | 1.0                      |            | [3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylic acid cyano(3-phenoxyphenyl) methyl ester] |                          |
| 64902-72-3 | Chlorsulfuron                                                                           | 1.0                      | 94-75-7    | 2,4-D                                                                                                                 | 0.1                      |
|            | [2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)amino]carbonyl] benzenesulfonamide] |                          |            | [Acetic acid, (2,4-dichlorophenoxy)-]                                                                                 | 1.0                      |
| 7440-47-3  | Chromium                                                                                | 1.0                      | 533-74-4   | Dazomet                                                                                                               | 1.0                      |
| 4680-78-8  | C.I. Acid Green 3                                                                       | 1.0                      |            | (Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione)                                                               |                          |
| 6459-94-5  | C.I. Acid Red 114                                                                       | 0.1                      | 53404-60-7 | Dazomet, sodium salt                                                                                                  | 1.0                      |
| 569-64-2   | C.I. Basic Green 4                                                                      | 1.0                      |            | [Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione, ion(1-), sodium]                                              |                          |
| 989-38-8   | C.I. Basic Red 1                                                                        | 1.0                      |            |                                                                                                                       |                          |
| 1937-37-7  | C.I. Direct Black 38                                                                    | 0.1                      | 94-82-6    | 2,4-DB                                                                                                                | 1.0                      |
| 2602-46-2  | C.I. Direct Blue 6                                                                      | 0.1                      | 1929-73-3  | 2,4-D butoxyethyl ester                                                                                               | 0.1                      |
| 28407-37-6 | C.I. Direct Blue 218                                                                    | 1.0                      | 94-80-4    | 2,4-D butyl ester                                                                                                     | 0.1                      |
| 16071-86-6 | C.I. Direct Brown 95                                                                    | 0.1                      | 2971-38-2  | 2,4-D chlorocrotyl ester                                                                                              | 0.1                      |
| 2832-40-8  | C.I. Disperse Yellow 3                                                                  | 1.0                      | 1163-19-5  | Decabromodiphenyl oxide                                                                                               | 1.0                      |
| 3761-53-3  | C.I. Food Red 5                                                                         | 0.1                      | 13684-56-5 | Desmedipham                                                                                                           | 1.0                      |
| 81-88-9    | C.I. Food Red 15                                                                        | 1.0                      | 1928-43-4  | 2,4-D 2-ethylhexyl ester                                                                                              | 0.1                      |
| 3118-97-6  | C.I. Solvent Orange 7                                                                   | 1.0                      | 53404-37-8 | 2,4-D 2-ethyl-4-methylpentyl ester                                                                                    | 0.1                      |
| 97-56-3    | C.I. Solvent Yellow 3                                                                   | 1.0                      |            |                                                                                                                       |                          |
| 842-07-9   | C.I. Solvent Yellow 14                                                                  | 1.0                      | 2303-16-4  | Diallate                                                                                                              | 1.0                      |
| 492-80-8   | C.I. Solvent Yellow 34 (Auramine)                                                       | 0.1                      |            | [Carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester]                                            |                          |
| 128-66-5   | C.I. Vat Yellow 4                                                                       | 1.0                      |            |                                                                                                                       |                          |
| 7440-48-4  | Cobalt                                                                                  | 0.1                      | 615-05-4   | 2,4-Diaminoanisole                                                                                                    | 0.1                      |
| 7440-50-8  | Copper                                                                                  | 1.0                      | 39156-41-7 | 2,4-Diaminoanisole sulfate                                                                                            | 0.1                      |
| 8001-58-9  | Creosote                                                                                | 0.1                      | 101-80-4   | 4,4'-Diaminodiphenyl ether                                                                                            | 0.1                      |
| 120-71-8   | p-Cresidine                                                                             | 0.1                      | 95-80-7    | 2,4-Diaminotoluene                                                                                                    | 0.1                      |
| 108-39-4   | m-Cresol                                                                                | 1.0                      | 25376-45-8 | Diaminotoluene (mixed isomers)                                                                                        | 0.1                      |
| 95-48-7    | o-Cresol                                                                                | 1.0                      |            |                                                                                                                       |                          |
| 106-44-5   | p-Cresol                                                                                | 1.0                      | 333-41-5   | Diazinon                                                                                                              | 1.0                      |
| 1319-77-3  | Cresol (mixed isomers)                                                                  | 1.0                      | 334-88-3   | Diazomethane                                                                                                          | 1.0                      |
| 4170-30-3  | Crotonaldehyde                                                                          | 1.0                      | 132-64-9   | Dibenzofuran                                                                                                          | 1.0                      |
| 98-82-8    | Cumene                                                                                  | 1.0                      | 96-12-8    | 1,2-Dibromo-3-chloropropane (DBCP)                                                                                    | 0.1                      |
| 80-15-9    | Cumene hydroperoxide                                                                    | 1.0                      |            |                                                                                                                       |                          |
| 135-20-6   | Cupferron                                                                               | 0.1                      | 106-93-4   | 1,2-Dibromoethane (Ethylene dibromide)                                                                                | 0.1                      |
|            | [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]                                      |                          |            |                                                                                                                       |                          |

\*C.I. means "Color Index"

| CAS Number  | Chemical Name                                          | De Minimis Concentration | CAS Number  | Chemical Name                                                                           | De Minimis Concentration |
|-------------|--------------------------------------------------------|--------------------------|-------------|-----------------------------------------------------------------------------------------|--------------------------|
| 124-73-2    | Dibromotetrafluoroethane (Halon 2402)                  | 1.0                      | 422-56-0    | 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)                                  | 1.0                      |
| 84-74-2     | Dibutyl phthalate                                      | 1.0                      | 97-23-4     | Dichlorophene [2,2'-Methylenebis(4-chlorophenol)]                                       | 1.0                      |
| 1918-00-9   | Dicamba (3,6-Dichloro-2-methoxybenzoic acid)           | 1.0                      | 120-83-2    | 2,4-Dichlorophenol                                                                      | 1.0                      |
| 99-30-9     | Dichloran [2,6-Dichloro-4-nitroaniline]                | 1.0                      | 78-87-5     | 1,2-Dichloropropane                                                                     | 1.0                      |
| 95-50-1     | 1,2-Dichlorobenzene                                    | 1.0                      | 10061-02-6  | trans-1,3-Dichloropropene                                                               | 0.1                      |
| 541-73-1    | 1,3-Dichlorobenzene                                    | 1.0                      | 78-88-6     | 2,3-Dichloropropene                                                                     | 1.0                      |
| 106-46-7    | 1,4-Dichlorobenzene                                    | 0.1                      | 542-75-6    | 1,3-Dichloropropylene                                                                   | 0.1                      |
| 25321-22-6  | Dichlorobenzene (mixed isomers)                        | 0.1                      | 76-14-2     | Dichlorotetrafluoroethane (CFC-114)                                                     | 1.0                      |
| 91-94-1     | 3,3'-Dichlorobenzidine                                 | 0.1                      | 34077-87-7  | Dichlorotrifluoroethane                                                                 | 1.0                      |
| 612-83-9    | 3,3'-Dichlorobenzidine dihydrochloride                 | 0.1                      | 90454-18-5  | Dichloro-1,1,2-trifluoroethane                                                          | 1.0                      |
| 64969-34-2  | 3,3'-Dichlorobenzidine sulfate                         | 0.1                      | 812-04-4    | 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)                                          | 1.0                      |
| 75-27-4     | Dichlorobromomethane                                   | 1.0                      | 354-23-4    | 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)                                          | 1.0                      |
| 764-41-0    | 1,4-Dichloro-2-butene                                  | 1.0                      | 306-83-2    | 2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)                                           | 1.0                      |
| 110-57-6    | trans-1,4-Dichloro-2-butene                            | 1.0                      | 62-73-7     | Dichlorvos                                                                              | 0.1                      |
| 1649-08-7   | 1,2-Dichloro-1,1-difluoroethane (HCFC-132b)            | 1.0                      |             | [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]                                   |                          |
| 75-71-8     | Dichlorodifluoromethane (CFC-12)                       | 1.0                      | 51338-27-3  | Diclofop methyl [2-[4-(2,4-Dichlorophenoxy)phenoxy]propanoic acid, methyl ester]        | 1.0                      |
| 107-06-2    | 1,2-Dichloroethane (Ethylene dichloride)               | 0.1                      | 115-32-2    | Dicofol [Benzenemethanol, 4-chloro-.alpha.-4-(chlorophenyl)-.alpha.-(trichloromethyl)-] | 1.0                      |
| 540-59-0    | 1,2-Dichloroethylene                                   | 1.0                      |             |                                                                                         |                          |
| 1717-00-6   | 1,1-Dichloro-1-fluoroethane (HCFC-141b)                | 1.0                      | 77-73-6     | Dicyclopentadiene                                                                       | 1.0                      |
| 75-43-4     | Dichlorofluoromethane (HCFC-21)                        | 1.0                      | 1464-53-5   | Diepoxybutane                                                                           | 0.1                      |
| 75-09-2     | Dichloromethane (Methylene chloride)                   | 0.1                      | 111-42-2    | Diethanolamine                                                                          | 1.0                      |
| 127564-92-5 | Dichloropentafluoropropane                             | 1.0                      | 38727-55-8  | Diethyl ethyl                                                                           | 1.0                      |
| 13474-88-9  | 1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc) | 1.0                      | 117-81-7    | Di(2-ethylhexyl) phthalate (DEHP)                                                       | 0.1                      |
| 111512-56-2 | 1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb) | 1.0                      | 64-67-5     | Diethyl sulfate                                                                         | 0.1                      |
| 422-44-6    | 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb) | 1.0                      | 35367-38-5  | Diflubenzuron                                                                           | 1.0                      |
| 431-86-7    | 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da) | 1.0                      | 101-90-6    | Diglycidyl resorcinol ether                                                             | 0.1                      |
| 507-55-1    | 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb) | 1.0                      | 94-58-6     | Dihydrosafrole                                                                          | 0.1                      |
| 136013-79-1 | 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea) | 1.0                      | 55290-64-7  | Dimethipin [2,3-Dihydro-5,6-dimethyl-1,4-dithiin-1,1,4,4-tetraoxide]                    | 1.0                      |
| 128903-21-9 | 2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa) | 1.0                      | 60-51-5     | Dimethoate                                                                              | 1.0                      |
| 422-48-0    | 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba) | 1.0                      | 119-90-4    | 3,3'-Dimethoxybenzidine                                                                 | 0.1                      |
|             |                                                        |                          | 20325-40-0  | 3,3'-Dimethoxybenzidine dihydrochloride (o-Dianisidine dihydrochloride)                 | 0.1                      |
|             |                                                        |                          | 111984-09-9 | 3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydrochloride)                     | 0.1                      |

| CAS Number | Chemical Name                                                                              | De Minimis Concentration | CAS Number | Chemical Name                                                                                      | De Minimis Concentration |
|------------|--------------------------------------------------------------------------------------------|--------------------------|------------|----------------------------------------------------------------------------------------------------|--------------------------|
| 124-40-3   | Dimethylamine                                                                              | 1.0                      | 541-53-7   | 2,4-Dithiobiuret                                                                                   | 1.0                      |
| 2300-66-5  | Dimethylamine dicamba                                                                      | 1.0                      | 330-54-1   | Diuron                                                                                             | 1.0                      |
| 60-11-7    | 4-Dimethylaminoazobenzene                                                                  | 0.1                      | 2439-10-3  | Dodine [Dodecylguanidine monoacetate]                                                              | 1.0                      |
| 121-69-7   | N,N-Dimethylaniline                                                                        | 1.0                      | 120-36-5   | 2,4-DP                                                                                             | 0.1                      |
| 119-93-7   | 3,3'-Dimethylbenzidine (o-Tolidine)                                                        | 0.1                      | 1320-18-9  | 2,4-D propylene glycol butyl ether ester                                                           | 0.1                      |
| 612-82-8   | 3,3'-Dimethylbenzidine dihydrochloride (o-Tolidine dihydrochloride)                        | 0.1                      | 2702-72-9  | 2,4-D sodium salt                                                                                  | 0.1                      |
| 41766-75-0 | 3,3'-Dimethylbenzidine dihydrofluoride (o-Tolidine dihydrofluoride)                        | 0.1                      | 106-89-8   | Epichlorohydrin                                                                                    | 0.1                      |
| 79-44-7    | Dimethylcarbamyl chloride                                                                  | 0.1                      | 13194-48-4 | Ethoprop [Phosphorodithioic acid O-ethyl S,S-dipropyl ester]                                       | 1.0                      |
| 2524-03-0  | Dimethyl chlorothiophosphate                                                               | 1.0                      | 110-80-5   | 2-Ethoxyethanol                                                                                    | 1.0                      |
| 68-12-2    | N,N-Dimethylformamide                                                                      | 0.1                      | 140-88-5   | Ethyl acrylate                                                                                     | 0.1                      |
| 57-14-7    | 1,1-Dimethylhydrazine                                                                      | 0.1                      | 100-41-4   | Ethylbenzene                                                                                       | 1.0                      |
| 105-67-9   | 2,4-Dimethylphenol                                                                         | 1.0                      | 541-41-3   | Ethyl chloroformate                                                                                | 1.0                      |
| 131-11-3   | Dimethyl phthalate                                                                         | 1.0                      | 759-94-4   | Ethyl dipropylthiocarbamate (EPTC)                                                                 | 1.0                      |
| 77-78-1    | Dimethyl sulfate                                                                           | 0.1                      | 74-85-1    | Ethylene                                                                                           | 1.0                      |
| 99-65-0    | m-Dinitrobenzene                                                                           | 1.0                      | 107-21-1   | Ethylene glycol                                                                                    | 1.0                      |
| 528-29-0   | o-Dinitrobenzene                                                                           | 1.0                      | 151-56-4   | Ethyleneimine (Aziridine)                                                                          | 0.1                      |
| 100-25-4   | p-Dinitrobenzene                                                                           | 1.0                      | 75-21-8    | Ethylene oxide                                                                                     | 0.1                      |
| 88-85-7    | Dinitrobutyl phenol (Dinoseb)                                                              | 1.0                      | 96-45-7    | Ethylene thiourea                                                                                  | 0.1                      |
| 534-52-1   | 4,6-Dinitro-o-cresol                                                                       | 1.0                      | 75-34-3    | Ethylidene dichloride                                                                              | 1.0                      |
| 51-28-5    | 2,4-Dinitrophenol                                                                          | 1.0                      | 52-85-7    | Famphur                                                                                            | 1.0                      |
| 121-14-2   | 2,4-Dinitrotoluene                                                                         | 0.1                      | 60168-88-9 | Fenarimol                                                                                          | 1.0                      |
| 606-20-2   | 2,6-Dinitrotoluene                                                                         | 0.1                      |            | [.alpha.-(2-Chlorophenyl)-.alpha.-(4-chlorophenyl)-5-pyrimidine-methanol]                          |                          |
| 25321-14-6 | Dinitrotoluene (mixed isomers)                                                             | 1.0                      | 13356-08-6 | Fenbutatin oxide                                                                                   | 1.0                      |
| 39300-45-3 | Dinocap                                                                                    | 1.0                      |            | (Hexakis(2-methyl-2-phenylpropyl)distannoxane)                                                     |                          |
| 123-91-1   | 1,4-Dioxane                                                                                | 0.1                      | 66441-23-4 | Fenoxaprop ethyl [2-(4-((6-Chloro-2-benzoxazolylen)-oxy)phenoxy)propanoic acid, ethyl ester]       | 1.0                      |
| 957-51-7   | Diphenamid                                                                                 | 1.0                      | 72490-01-8 | Fenoxycarb [[2-(4-Phenoxyphenoxy)ethyl]carbamic acid ethyl ester]                                  | 1.0                      |
| 122-39-4   | Diphenylamine                                                                              | 1.0                      | 39515-41-8 | Fenpropathrin [2,2,3,3-Tetramethylcyclopropane carboxylic acid cyano(3-phenoxyphenyl)methyl ester] | 1.0                      |
| 122-66-7   | 1,2-Diphenylhydrazine (Hydrazobenzene)                                                     | 0.1                      | 55-38-9    | Fenthion [O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl] ester, phosphorothioic acid]              | 1.0                      |
| 2164-07-0  | Dipotassium endothall [7-Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic acid, dipotassium salt] | 1.0                      |            |                                                                                                    |                          |
| 136-45-8   | Dipropyl isocinchomeronate                                                                 | 1.0                      |            |                                                                                                    |                          |
| 138-93-2   | Disodium cyanodithioimidocarbonate                                                         | 1.0                      |            |                                                                                                    |                          |
| 94-11-1    | 2,4-D isopropyl ester                                                                      | 0.1                      |            |                                                                                                    |                          |

\*C.I. means "Color Index"

II-7 Table II

| CAS Number | Chemical Name                                                                                                                                 | De Minimis Concentration | CAS Number | Chemical Name                                                                                      | De Minimis Concentration |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------|----------------------------------------------------------------------------------------------------|--------------------------|
| 51630-58-1 | Fenvalerate                                                                                                                                   | 1.0                      | 302-01-2   | Hydrazine                                                                                          | 0.1                      |
|            | [4-Chloro-alpha-(1-methylethyl)benzeneacetic acid cyano(3-phenoxyphenyl)methyl ester]                                                         |                          | 10034-93-2 | Hydrazine sulfate                                                                                  | 0.1                      |
| 14484-64-1 | Ferbam                                                                                                                                        | 1.0                      | 7647-01-0  | Hydrochloric acid                                                                                  | 1.0                      |
|            | [Tris(dimethylcarbamodithioato-S,S')iron]                                                                                                     |                          |            | (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)   |                          |
| 69806-50-4 | Fluazifop butyl                                                                                                                               | 1.0                      | 74-90-8    | Hydrogen cyanide                                                                                   | 1.0                      |
|            | [2-[4-[[5-(Trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoic acid, butyl ester]                                                              |                          | 7664-39-3  | Hydrogen fluoride                                                                                  | 1.0                      |
| 2164-17-2  | Fluometuron                                                                                                                                   | 1.0                      | 123-31-9   | Hydroquinone                                                                                       | 1.0                      |
|            | [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]                                                                                          |                          | 35554-44-0 | Imazalil                                                                                           | 1.0                      |
| 7782-41-4  | Fluorine                                                                                                                                      | 1.0                      |            | [1-[2-(2,4-Dichlorophenyl)-2-(2-propenyloxy)ethyl]-1H-imidazole]                                   |                          |
| 51-21-8    | Fluorouracil (5-Fluorouracil)                                                                                                                 | 1.0                      | 55406-53-6 | 3-Iodo-2-propynyl butylcarbamate                                                                   | 1.0                      |
| 69409-94-5 | Fluvalinate                                                                                                                                   | 1.0                      | 13463-40-6 | Iron pentacarbonyl                                                                                 | 1.0                      |
|            | [N-[2-Chloro-4-(trifluoromethyl)phenyl]-DL-valine(+)-cyano(3-phenoxyphenyl)-methyl ester]                                                     |                          | 78-84-2    | Isobutyraldehyde                                                                                   | 1.0                      |
| 133-07-3   | Folpet                                                                                                                                        | 1.0                      | 465-73-6   | Isodrin                                                                                            | 1.0                      |
| 72178-02-0 | Fomesafen                                                                                                                                     | 1.0                      | 25311-71-1 | Isfenphos                                                                                          | 1.0                      |
|            | [5-(2-Chloro-4-(trifluoromethyl)phenoxy)-N-methylsulfonyl-2-nitrobenzamide]                                                                   |                          |            | [2-[[Ethoxyl[(1-methylethyl)amino]-phosphinothioyl]oxy] benzoic acid 1-methylethyl ester]          |                          |
| 50-00-0    | Formaldehyde                                                                                                                                  | 0.1                      | 67-63-0    | Isopropyl alcohol                                                                                  | 1.0                      |
| 64-18-6    | Formic acid                                                                                                                                   | 1.0                      |            | (manufacturing-strong acid process, no supplier notification)                                      |                          |
| 76-13-1    | Freon 113                                                                                                                                     | 1.0                      | 80-05-7    | 4,4'-Isopropylidenediphenol                                                                        | 1.0                      |
|            | [Ethane, 1,1,2-trichloro-1,2,2,-trifluoro-]                                                                                                   |                          | 120-58-1   | Isosafrole                                                                                         | 1.0                      |
| 76-44-8    | Heptachlor                                                                                                                                    | 0.1                      | 77501-63-4 | Lactofen                                                                                           | 1.0                      |
|            | [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]                                                                        |                          |            | [Benzoic acid, 5-[2-Chloro-4-(trifluoromethyl)phenoxy]-2-nitro-2-ethoxy-1-methyl-2-oxoethyl ester] |                          |
| 118-74-1   | Hexachlorobenzene                                                                                                                             | 0.1                      | 7439-92-1  | Lead                                                                                               | 0.1                      |
| 87-68-3    | Hexachloro-1,3-butadiene                                                                                                                      | 1.0                      | 58-89-9    | Lindane                                                                                            | 0.1                      |
| 319-84-6   | alpha-Hexachlorocyclohexane                                                                                                                   | 1.0                      |            | [Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]     |                          |
| 77-47-4    | Hexachlorocyclopentadiene                                                                                                                     | 1.0                      | 330-55-2   | Linuron                                                                                            | 1.0                      |
| 67-72-1    | Hexachloroethane                                                                                                                              | 1.0                      | 554-13-2   | Lithium carbonate                                                                                  | 1.0                      |
| 1335-87-1  | Hexachloronaphthalene                                                                                                                         | 1.0                      | 121-75-5   | Malathion                                                                                          | 1.0                      |
| 70-30-4    | Hexachlorophene                                                                                                                               | 1.0                      | 108-31-6   | Maleic anhydride                                                                                   | 1.0                      |
| 680-31-9   | Hexamethylphosphoramide                                                                                                                       | 0.1                      | 109-77-3   | Malononitrile                                                                                      | 1.0                      |
| 110-54-3   | n-Hexane                                                                                                                                      | 1.0                      | 12427-38-2 | Maneb                                                                                              | 1.0                      |
| 51235-04-2 | Hexazinone                                                                                                                                    | 1.0                      |            | [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]                                      |                          |
| 67485-29-4 | Hydramethylnon                                                                                                                                | 1.0                      | 7439-96-5  | Manganese                                                                                          | 1.0                      |
|            | [Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-2-propenyldiene]hydrazone] |                          | 93-65-2    | Mecoprop                                                                                           | 0.1                      |
|            |                                                                                                                                               |                          | 149-30-4   | 2-Mercaptobenzothiazole (MBT)                                                                      | 1.0                      |
|            |                                                                                                                                               |                          | 7439-97-6  | Mercury                                                                                            | 1.0                      |
|            |                                                                                                                                               |                          | 150-50-5   | Merphos                                                                                            | 1.0                      |
|            |                                                                                                                                               |                          | 126-98-7   | Methacrylonitrile                                                                                  | 1.0                      |
|            |                                                                                                                                               |                          | 137-42-8   | Metham sodium (Sodium methylthiocarbamate)                                                         | 1.0                      |

| CAS Number | Chemical Name                                              | De Minimis Concentration | CAS Number | Chemical Name                                                               | De Minimis Concentration |
|------------|------------------------------------------------------------|--------------------------|------------|-----------------------------------------------------------------------------|--------------------------|
| 67-56-1    | Methanol                                                   | 1.0                      | 88671-89-0 | Myclobutanil                                                                | 1.0                      |
| 20354-26-1 | Methazole                                                  | 1.0                      |            | [.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile] |                          |
| 2032-65-7  | Methiocarb                                                 | 1.0                      | 142-59-6   | Nabam                                                                       | 1.0                      |
| 94-74-6    | Methoxone                                                  | 0.1                      | 300-76-5   | Naled                                                                       | 1.0                      |
|            | ((4-Chloro-2-methylphenoxy)acetic acid) (MCPA)             |                          | 91-20-3    | Naphthalene                                                                 | 1.0                      |
| 3653-48-3  | Methoxone sodium salt                                      | 0.1                      | 134-32-7   | alpha-Naphthylamine                                                         | 0.1                      |
|            | ((4-Chloro-2-methylphenoxy)acetate sodium salt)            |                          | 91-59-8    | beta-Naphthylamine                                                          | 0.1                      |
| 72-43-5    | Methoxychlor                                               | 1.0                      | 7440-02-0  | Nickel                                                                      | 0.1                      |
|            | [Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-]] |                          | 1929-82-4  | Nitrapyrin                                                                  | 1.0                      |
| 109-86-4   | 2-Methoxyethanol                                           | 1.0                      |            | (2-Chloro-6-(trichloromethyl)-pyridine)                                     |                          |
| 96-33-3    | Methyl acrylate                                            | 1.0                      | 7697-37-2  | Nitric acid                                                                 | 1.0                      |
| 1634-04-4  | Methyl tert-butyl ether                                    | 1.0                      | 139-13-9   | Nitrilotriacetic acid                                                       | 0.1                      |
| 79-22-1    | Methyl chlorocarbonate                                     | 1.0                      | 100-01-6   | p-Nitroaniline                                                              | 1.0                      |
| 101-14-4   | 4,4'-Methylenebis(2-chloroaniline) (MBOCA)                 | 0.1                      | 99-59-2    | 5-Nitro-o-anisidine                                                         | 1.0                      |
| 101-61-1   | 4,4'-Methylenebis(N,N-dimethyl)benzenamine                 | 0.1                      | 98-95-3    | Nitrobenzene                                                                | 0.1                      |
| 74-95-3    | Methylene bromide                                          | 1.0                      | 92-93-3    | 4-Nitrobiphenyl                                                             | 0.1                      |
| 101-77-9   | 4,4'-Methylenedianiline                                    | 0.1                      | 1836-75-5  | Nitrofen                                                                    | 0.1                      |
| 78-93-3    | Methyl ethyl ketone                                        | 1.0                      |            | [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]                                 |                          |
| 60-34-4    | Methyl hydrazine                                           | 1.0                      | 51-75-2    | Nitrogen mustard                                                            | 0.1                      |
| 74-88-4    | Methyl iodide                                              | 1.0                      |            | [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]                             |                          |
| 108-10-1   | Methyl isobutyl ketone                                     | 1.0                      | 55-63-0    | Nitroglycerin                                                               | 1.0                      |
| 624-83-9   | Methyl isocyanate                                          | 1.0                      | 88-75-5    | 2-Nitrophenol                                                               | 1.0                      |
| 556-61-6   | Methyl isothiocyanate                                      | 1.0                      | 100-02-7   | 4-Nitrophenol                                                               | 1.0                      |
|            | [Isothiocyanatomethane]                                    |                          | 79-46-9    | 2-Nitropropane                                                              | 0.1                      |
| 75-86-5    | 2-Methylactonitrile                                        | 1.0                      | 924-16-3   | N-Nitrosodi-n-butylamine                                                    | 0.1                      |
| 80-62-6    | Methyl methacrylate                                        | 1.0                      | 55-18-5    | N-Nitrosodiethylamine                                                       | 0.1                      |
| 924-42-5   | N-Methylolacrylamide                                       | 1.0                      | 62-75-9    | N-Nitrosodimethylamine                                                      | 0.1                      |
| 298-00-0   | Methyl parathion                                           | 1.0                      | 86-30-6    | N-Nitrosodiphenylamine                                                      | 1.0                      |
| 109-06-8   | 2-Methylpyridine                                           | 1.0                      | 156-10-5   | p-Nitrosodiphenylamine                                                      | 1.0                      |
| 872-50-4   | N-Methyl-2-pyrrolidone                                     | 1.0                      | 621-64-7   | N-Nitrosodi-n-propylamine                                                   | 0.1                      |
| 9006-42-2  | Metiram                                                    | 1.0                      | 759-73-9   | N-Nitroso-N-ethylurea                                                       | 0.1                      |
| 21087-64-9 | Metribuzin                                                 | 1.0                      | 684-93-5   | N-Nitroso-N-methylurea                                                      | 0.1                      |
| 7786-34-7  | Mevinphos                                                  | 1.0                      | 4549-40-0  | N-Nitrosomethylvinylamine                                                   | 0.1                      |
| 90-94-8    | Michler's ketone                                           | 0.1                      | 59-89-2    | N-Nitrosomorpholine                                                         | 0.1                      |
| 2212-67-1  | Molinate                                                   | 1.0                      | 16543-55-8 | N-Nitrosornicotine                                                          | 0.1                      |
|            | (1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester) |                          | 100-75-4   | N-Nitrosopiperidine                                                         | 0.1                      |
| 1313-27-5  | Molybdenum trioxide                                        | 1.0                      | 99-55-8    | 5-Nitro-o-toluidine                                                         | 1.0                      |
| 76-15-3    | Monochloropentafluoroethane (CFC-115)                      | 1.0                      | 27314-13-2 | Norflurazon                                                                 | 1.0                      |
| 150-68-5   | Monuron                                                    | 1.0                      |            | [4-Chloro-5-(methylamino)-2-[3-(trifluoromethyl)phenyl]-3(2H)-pyridazinone] |                          |
| 505-60-2   | Mustard gas                                                | 0.1                      | 2234-13-1  | Octachloronaphthalene                                                       | 1.0                      |
|            | [Ethane, 1,1'-thiobis[2-chloro-]]                          |                          | 19044-88-3 | Oryzalin                                                                    | 1.0                      |
|            |                                                            |                          |            | [4-(Dipropylamino)-3,5-dinitrobenzene sulfonamide]                          |                          |
|            |                                                            |                          | 20816-12-0 | Osmium tetroxide                                                            | 1.0                      |

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| CAS Number | Chemical Name                                                                                     | De Minimis Concentration | CAS Number | Chemical Name                                                                     | De Minimis Concentration |
|------------|---------------------------------------------------------------------------------------------------|--------------------------|------------|-----------------------------------------------------------------------------------|--------------------------|
| 301-12-2   | Oxydemeton methyl                                                                                 | 1.0                      | 1918-02-1  | Picloram                                                                          | 1.0                      |
|            | [S-(2-(Ethylsulfinyl)ethyl) O,O-dimethyl ester phosphorothioic acid]                              |                          | 88-89-1    | Picric acid                                                                       | 1.0                      |
| 19666-30-9 | Oxydiazon                                                                                         | 1.0                      | 51-03-6    | Piperonyl butoxide                                                                | 1.0                      |
|            | [3-[2,4-Dichloro-5-(1-methylethoxy)phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2(3H)-one]       |                          | 29232-93-7 | Pirimiphos methyl                                                                 | 1.0                      |
| 42874-03-3 | Oxyfluorfen                                                                                       | 1.0                      |            | [O-(2-(Diethylamino)-6-methyl-4-pyrimidinyl)-O,O-dimethylphosphorothioate]        |                          |
| 10028-15-6 | Ozone                                                                                             | 1.0                      | 1336-36-3  | Polychlorinated biphenyls (PCBs)                                                  | 0.1                      |
| 123-63-7   | Paraldehyde                                                                                       | 1.0                      | 7758-01-2  | Potassium bromate                                                                 | 0.1                      |
| 1910-42-5  | Paraquat dichloride                                                                               | 1.0                      | 128-03-0   | Potassium dimethyldithiocarbamate                                                 | 1.0                      |
| 56-38-2    | Parathion                                                                                         | 1.0                      | 137-41-7   | Potassium N-methyldithiocarbamate                                                 | 1.0                      |
|            | [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl)ester]                                        |                          | 41198-08-7 | Profenofos                                                                        | 1.0                      |
| 1114-71-2  | Pebulate                                                                                          | 1.0                      |            | [O-(4-Bromo-2-chlorophenyl)-O-ethyl-S-propyl phosphorothioate]                    |                          |
|            | [Butylethylcarbamothioic acid S-propyl ester]                                                     |                          | 7287-19-6  | Prometryn                                                                         | 1.0                      |
| 40487-42-1 | Pendimethalin                                                                                     | 1.0                      |            | [N,N'-Bis(1-methylethyl)-6-methylthio-1,3,5-triazine-2,4-diamine]                 |                          |
|            | [N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine]                                           |                          | 23950-58-5 | Pronamide                                                                         | 1.0                      |
| 76-01-7    | Pentachloroethane                                                                                 | 1.0                      | 1918-16-7  | Propachlor                                                                        | 1.0                      |
| 87-86-5    | Pentachlorophenol (PCP)                                                                           | 0.1                      |            | [2-Chloro-N-(1-methylethyl)-N-phenylacetamide]                                    |                          |
| 57-33-0    | Pentobarbital sodium                                                                              | 1.0                      | 1120-71-4  | Propane sultone                                                                   | 0.1                      |
| 79-21-0    | Peracetic acid                                                                                    | 1.0                      | 709-98-8   | Propanil                                                                          | 1.0                      |
| 594-42-3   | Perchloromethyl mercaptan                                                                         | 1.0                      |            | [N-(3,4-Dichlorophenyl)-propanamide]                                              |                          |
| 52645-53-1 | Permethrin                                                                                        | 1.0                      | 2312-35-8  | Propargite                                                                        | 1.0                      |
|            | [3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, (3-phenoxyphenyl) methyl ester] |                          | 107-19-7   | Propargyl alcohol                                                                 | 1.0                      |
| 85-01-8    | Phenanthrene                                                                                      | 1.0                      | 31218-83-4 | Propetamphos                                                                      | 1.0                      |
| 108-95-2   | Phenol                                                                                            | 1.0                      |            | [3-[(Ethylamino) methoxyphosphinothioyl]oxy]-2-butenic acid, 1-methylethyl ester] |                          |
| 26002-80-2 | Phenothrin                                                                                        | 1.0                      | 60207-90-1 | Propiconazole                                                                     | 1.0                      |
|            | [2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (3-phenoxyphenyl)methyl ester]   |                          |            | [1-[2-(2,4-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]-methyl-1H-1,2,4,-triazole] |                          |
| 95-54-5    | 1,2-Phenylenediamine                                                                              | 1.0                      | 57-57-8    | beta-Propiolactone                                                                | 0.1                      |
| 108-45-2   | 1,3-Phenylenediamine                                                                              | 1.0                      | 123-38-6   | Propionaldehyde                                                                   | 1.0                      |
| 106-50-3   | p-Phenylenediamine                                                                                | 1.0                      | 114-26-1   | Propoxur                                                                          | 1.0                      |
| 615-28-1   | 1,2-Phenylenediamine dihydrochloride                                                              | 1.0                      |            | [Phenol, 2-(1-methylethoxy)-, methylcarbamate]                                    |                          |
| 624-18-0   | 1,4-Phenylenediamine dihydrochloride                                                              | 1.0                      | 115-07-1   | Propylene (Propene)                                                               | 1.0                      |
| 90-43-7    | 2-Phenylphenol                                                                                    | 1.0                      | 75-55-8    | Propyleneimine                                                                    | 0.1                      |
| 57-41-0    | Phenytol                                                                                          | 0.1                      | 75-56-9    | Propylene oxide                                                                   | 0.1                      |
| 75-44-5    | Phosgene                                                                                          | 1.0                      | 110-86-1   | Pyridine                                                                          | 1.0                      |
| 7803-51-2  | Phosphine                                                                                         | 1.0                      | 91-22-5    | Quinoline                                                                         | 1.0                      |
| 7664-38-2  | Phosphoric acid                                                                                   | 1.0                      | 106-51-4   | Quinone                                                                           | 1.0                      |
| 7723-14-0  | Phosphorus (yellow or white)                                                                      | 1.0                      | 82-68-8    | Quintozone                                                                        | 1.0                      |
| 85-44-9    | Phthalic anhydride                                                                                | 1.0                      |            | (Pentachloronitrobenzene)                                                         |                          |

| CAS Number | Chemical Name                                                                                       | De Minimis Concentration | CAS Number | Chemical Name                                                                                                                     | De Minimis Concentration |
|------------|-----------------------------------------------------------------------------------------------------|--------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 76578-14-8 | Quizalofop-ethyl                                                                                    | 1.0                      | 127-18-4   | Tetrachloroethylene (Perchloroethylene)                                                                                           | 0.1                      |
|            | [2-[4-[(6-Chloro-2-quinoxalinyloxy]phenoxy]propanoic acid ethyl ester]                              |                          | 354-11-0   | 1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)                                                                                    | 1.0                      |
| 10453-86-8 | Resmethrin                                                                                          | 1.0                      | 354-14-3   | 1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)                                                                                     | 1.0                      |
|            | [[5-(Phenylmethyl)-3-furanyl]-methyl-2,2-dimethyl-3-(2-methyl-1-propenyl) cyclopropane carboxylate] |                          | 961-11-5   | Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl) ethenyl dimethyl ester]                                    | 1.0                      |
| 81-07-2    | Saccharin (manufacturing, no supplier notification)                                                 | 0.1                      | 64-75-5    | Tetracycline hydrochloride                                                                                                        | 1.0                      |
| 94-59-7    | Safrole                                                                                             | 0.1                      | 7696-12-0  | Tetramethrin                                                                                                                      | 1.0                      |
| 7782-49-2  | Selenium                                                                                            | 1.0                      |            | [2,2-Dimethyl-3-(2-methyl-1-propenyl) cyclopropanecarboxylic acid (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl ester] |                          |
| 74051-80-2 | Sethoxydim                                                                                          | 1.0                      |            | Thallium                                                                                                                          | 1.0                      |
|            | [2-[1-(Ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxyl-2-cyclohexen-1-one]                    |                          | 7440-28-0  | Thiabendazole                                                                                                                     | 1.0                      |
| 7440-22-4  | Silver                                                                                              | 1.0                      | 148-79-8   | [2-(4-Thiazolyl)-1H-benzimidazole]                                                                                                |                          |
| 122-34-9   | Simazine                                                                                            | 1.0                      |            | Thioacetamide                                                                                                                     | 0.1                      |
| 26628-22-8 | Sodium azide                                                                                        | 1.0                      | 62-55-5    | Thiobencarb                                                                                                                       | 1.0                      |
| 1982-69-0  | Sodium dicamba                                                                                      | 1.0                      | 28249-77-6 | [Carbamic acid, diethylthio-, S-(p-chlorobenzyl)ester]                                                                            |                          |
|            | [3,6-Dichloro-2-methoxybenzoic acid, sodium salt]                                                   |                          |            | 4,4'-Thiodianiline                                                                                                                | 0.1                      |
| 128-04-1   | Sodium dimethyldithio-carbamate                                                                     | 1.0                      | 139-65-1   | Thiodicarb                                                                                                                        | 1.0                      |
|            |                                                                                                     |                          | 59669-26-0 | Thiophanate ethyl                                                                                                                 | 1.0                      |
| 62-74-8    | Sodium fluoroacetate                                                                                | 1.0                      | 23564-06-9 | [[1,2-Phenylenebis-(iminocarbonothioyl)]biscarbamic acid diethylester]                                                            |                          |
| 7632-00-0  | Sodium nitrite                                                                                      | 1.0                      |            | Thiophanate methyl                                                                                                                | 1.0                      |
| 131-52-2   | Sodium pentachlorophenate                                                                           | 1.0                      | 23564-05-8 | Thiosemicarbazide                                                                                                                 | 1.0                      |
| 132-27-4   | Sodium o-phenylphenoxide                                                                            | 0.1                      | 79-19-6    | Thiourea                                                                                                                          | 0.1                      |
| 100-42-5   | Styrene                                                                                             | 0.1                      | 62-56-6    | Thiram                                                                                                                            | 1.0                      |
| 96-09-3    | Styrene oxide                                                                                       | 0.1                      | 137-26-8   | Thorium dioxide                                                                                                                   | 1.0                      |
| 7664-93-9  | Sulfuric acid                                                                                       | 1.0                      | 1314-20-1  | Titanium tetrachloride                                                                                                            | 1.0                      |
|            | (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)    |                          | 7550-45-0  | Toluene                                                                                                                           | 1.0                      |
| 2699-79-8  | Sulfuryl fluoride (Vikane)                                                                          | 1.0                      | 108-88-3   | Toluene-2,4-diisocyanate                                                                                                          | 0.1                      |
| 35400-43-2 | Sulprofos                                                                                           | 1.0                      | 584-84-9   | Toluene-2,6-diisocyanate                                                                                                          | 0.1                      |
|            | [O-Ethyl O-[4-(methylthio)phenyl]phosphorodithioic acid S-propylester]                              |                          | 91-08-7    | Toluene diisocyanate (mixed isomers)                                                                                              | 0.1                      |
|            |                                                                                                     |                          | 26471-62-5 | o-Toluidine                                                                                                                       | 0.1                      |
| 34014-18-1 | Tebuthiuron                                                                                         | 1.0                      | 95-53-4    | o-Toluidine hydrochloride                                                                                                         | 0.1                      |
|            | [N-[5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl]-N,N'-dimethylurea]                                 |                          | 636-21-5   | Toxaphene                                                                                                                         | 0.1                      |
| 3383-96-8  | Temephos                                                                                            | 1.0                      | 8001-35-2  | Triadimefon                                                                                                                       | 1.0                      |
| 5902-51-2  | Terbacil                                                                                            | 1.0                      | 43121-43-3 | [1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone]                                                           |                          |
|            | [5-Chloro-3-(1,1-dimethylethyl)-6-methyl-2,4(1H,3H)-pyrimidinedione]                                |                          |            | Triallate                                                                                                                         | 1.0                      |
| 630-20-6   | 1,1,1,2-Tetrachloroethane                                                                           | 1.0                      | 2303-17-5  |                                                                                                                                   |                          |
| 79-34-5    | 1,1,2,2-Tetrachloroethane                                                                           | 1.0                      |            |                                                                                                                                   |                          |

\*C.I. means "Color Index"

| CAS Number  | Chemical Name                                                                                                   | De Minimis Concentration | CAS Number | Chemical Name                                            | De Minimis Concentration |
|-------------|-----------------------------------------------------------------------------------------------------------------|--------------------------|------------|----------------------------------------------------------|--------------------------|
| 68-76-8     | Triaziquone                                                                                                     | 1.0                      | 108-05-4   | Vinyl acetate                                            | 0.1                      |
|             | [2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-]                                                       |                          | 593-60-2   | Vinyl bromide                                            | 0.1                      |
| 101200-48-0 | Tribenuron methyl                                                                                               | 1.0                      | 75-01-4    | Vinyl chloride                                           | 0.1                      |
|             | [2-[[[(4-Methoxy-6-methyl-1,3,5-triazin-2-yl)-methylamino]-carbonyl]amino]sulfonyl] benzoic acid, methyl ester) |                          | 75-35-4    | Vinylidene chloride                                      | 1.0                      |
| 1983-10-4   | Tributyltin fluoride                                                                                            | 1.0                      | 108-38-3   | m-Xylene                                                 | 1.0                      |
| 2155-70-6   | Tributyltin methacrylate                                                                                        | 1.0                      | 95-47-6    | o-Xylene                                                 | 1.0                      |
| 78-48-8     | S,S,S-Tributyltrithio-phosphate (DEF)                                                                           | 1.0                      | 106-42-3   | p-Xylene                                                 | 1.0                      |
| 52-68-6     | Trichlorfon                                                                                                     | 1.0                      | 1330-20-7  | Xylene (mixed isomers)                                   | 1.0                      |
|             | [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]                                            |                          | 87-62-7    | 2,6-Xylidine                                             | 0.1                      |
| 76-02-8     | Trichloroacetyl chloride                                                                                        | 1.0                      | 7440-66-6  | Zinc (fume or dust)                                      | 1.0                      |
| 120-82-1    | 1,2,4-Trichlorobenzene                                                                                          | 1.0                      | 12122-67-7 | Zineb                                                    | 1.0                      |
| 71-55-6     | 1,1,1-Trichloroethane (Methyl chloroform)                                                                       | 1.0                      |            | [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex] |                          |
| 79-00-5     | 1,1,2-Trichloroethane                                                                                           | 1.0                      |            |                                                          |                          |
| 79-01-6     | Trichloroethylene                                                                                               | 0.1                      |            |                                                          |                          |
| 75-69-4     | Trichlorofluoromethane (CFC-11)                                                                                 | 1.0                      |            |                                                          |                          |
| 95-95-4     | 2,4,5-Trichlorophenol                                                                                           | 1.0                      |            |                                                          |                          |
| 88-06-2     | 2,4,6-Trichlorophenol                                                                                           | 0.1                      |            |                                                          |                          |
| 96-18-4     | 1,2,3-Trichloropropane                                                                                          | 0.1                      |            |                                                          |                          |
| 57213-69-1  | Triclopyr triethylammonium salt                                                                                 | 1.0                      |            |                                                          |                          |
| 121-44-8    | Triethylamine                                                                                                   | 1.0                      |            |                                                          |                          |
| 1582-09-8   | Trifluralin                                                                                                     | 1.0                      |            |                                                          |                          |
|             | [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]                                                   |                          |            |                                                          |                          |
| 26644-46-2  | Triforine                                                                                                       | 1.0                      |            |                                                          |                          |
|             | [N,N'-(1,4-Piperazinediylbis-(2,2,2-trichloroethylidene)] bisformamide]                                         |                          |            |                                                          |                          |
| 95-63-6     | 1,2,4-Trimethylbenzene                                                                                          | 1.0                      |            |                                                          |                          |
| 2655-15-4   | 2,3,5-Trimethylphenyl methylcarbamate                                                                           | 1.0                      |            |                                                          |                          |
| 639-58-7    | Triphenyltin chloride                                                                                           | 1.0                      |            |                                                          |                          |
| 76-87-9     | Triphenyltin hydroxide                                                                                          | 1.0                      |            |                                                          |                          |
| 126-72-7    | Tris(2,3-dibromopropyl) phosphate                                                                               | 0.1                      |            |                                                          |                          |
| 72-57-1     | Trypan blue                                                                                                     | 0.1                      |            |                                                          |                          |
| 51-79-6     | Urethane (Ethyl carbamate)                                                                                      | 0.1                      |            |                                                          |                          |
| 7440-62-2   | Vanadium (fume or dust)                                                                                         | 1.0                      |            |                                                          |                          |
| 50471-44-8  | Vinclozolin                                                                                                     | 1.0                      |            |                                                          |                          |
|             | [3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione]                                                |                          |            |                                                          |                          |

## b. CAS Numbered List of TRI Chemicals

|            |                                                                                                |               | DeMinimis  |                                                                         |
|------------|------------------------------------------------------------------------------------------------|---------------|------------|-------------------------------------------------------------------------|
| CAS Number | Chemical Name                                                                                  | Concentration | CAS Number | Chemical Name Concentration                                             |
|            |                                                                                                |               | 62-73-7    | Dichlorvos<br>[Phosphoric acid, 2,2-dichloroethenyl dimethyl ester] 0.1 |
| 50-00-0    | Formaldehyde                                                                                   | 0.1           |            |                                                                         |
| 51-03-6    | Piperonyl butoxide                                                                             | 1.0           | 62-74-8    | Sodium fluoroacetate 1.0                                                |
| 51-21-8    | Fluorouracil (5-Fluorouracil)                                                                  | 1.0           | 62-75-9    | N-Nitrosodimethylamine 0.1                                              |
| 51-28-5    | 2,4-Dinitrophenol                                                                              | 1.0           | 63-25-2    | Carbaryl 1.0                                                            |
| 51-75-2    | Nitrogen mustard                                                                               | 0.1           |            | [1-Naphthalenol, methylcarbamate]                                       |
|            | [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]                                                |               | 64-18-6    | Formic acid 1.0                                                         |
|            |                                                                                                |               | 64-67-5    | Diethyl sulfate 0.1                                                     |
| 51-79-6    | Urethane (Ethyl carbamate)                                                                     | 0.1           | 64-75-5    | Tetracycline hydrochloride 1.0                                          |
| 52-68-6    | Trichlorfon                                                                                    | 1.0           | 67-56-1    | Methanol 1.0                                                            |
|            | [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl) dimethyl ester]                             |               | 67-63-0    | Isopropyl alcohol 1.0                                                   |
| 52-85-7    | Famphur                                                                                        | 1.0           |            | (manufacturing-strong acid process, no supplier notification)           |
| 53-96-3    | 2-Acetylaminofluorene                                                                          | 0.1           | 67-66-3    | Chloroform 0.1                                                          |
| 55-18-5    | N-Nitrosodiethylamine                                                                          | 0.1           | 67-72-1    | Hexachloroethane 1.0                                                    |
| 55-21-0    | Benzamide                                                                                      | 1.0           | 68-12-2    | N,N-Dimethylformamide 0.1                                               |
| 55-38-9    | Fenthion                                                                                       | 1.0           | 68-76-8    | Triaziquone 1.0                                                         |
|            | [O,O-Dimethyl O-[3-methyl-4-(methylthio)phenyl] ester, phosphorothioic acid]                   |               |            | [2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-]               |
| 55-63-0    | Nitroglycerin                                                                                  | 1.0           | 70-30-4    | Hexachlorophene 1.0                                                     |
| 56-23-5    | Carbon tetrachloride                                                                           | 0.1           | 71-36-3    | n-Butyl alcohol 1.0                                                     |
| 56-35-9    | Bis(tributyltin) oxide                                                                         | 1.0           | 71-43-2    | Benzene 0.1                                                             |
| 56-38-2    | Parathion                                                                                      | 1.0           | 71-55-6    | 1,1,1-Trichloroethane (Methyl chloroform) 1.0                           |
|            | [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]                                    |               | 72-43-5    | Methoxychlor 1.0                                                        |
| 57-14-7    | 1,1-Dimethylhydrazine                                                                          | 0.1           |            | [Benzene, 1,1'-(2,2,2-trichloro-ethylidene)bis[4-methoxy-]]             |
| 57-33-0    | Pentobarbital sodium                                                                           | 1.0           | 72-57-1    | Trypan blue 0.1                                                         |
| 57-41-0    | Phenytoin                                                                                      | 0.1           | 74-83-9    | Bromomethane (Methyl bromide) 1.0                                       |
| 57-57-8    | beta-Propiolactone                                                                             | 0.1           | 74-85-1    | Ethylene 1.0                                                            |
| 57-74-9    | Chlordane                                                                                      | 0.1           | 74-87-3    | Chloromethane (Methyl chloride) 1.0                                     |
|            | [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]                        |               | 74-88-4    | Methyl iodide 1.0                                                       |
|            |                                                                                                |               | 74-90-8    | Hydrogen cyanide 1.0                                                    |
| 58-89-9    | Lindane                                                                                        | 0.1           | 74-95-3    | Methylene bromide 1.0                                                   |
|            | [Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-] |               | 75-00-3    | Chloroethane (Ethyl chloride) 1.0                                       |
|            |                                                                                                |               | 75-01-4    | Vinyl chloride 0.1                                                      |
| 59-89-2    | N-Nitrosomorpholine                                                                            | 0.1           | 75-05-8    | Acetonitrile 1.0                                                        |
| 60-09-3    | 4-Aminoazobenzene                                                                              | 0.1           | 75-07-0    | Acetaldehyde 0.1                                                        |
| 60-11-7    | 4-Dimethylaminoazobenzene                                                                      | 0.1           | 75-09-2    | Dichloromethane (Methylene chloride) 0.1                                |
| 60-34-4    | Methyl hydrazine                                                                               | 1.0           |            |                                                                         |
| 60-35-5    | Acetamide                                                                                      | 0.1           | 75-15-0    | Carbon disulfide 1.0                                                    |
| 60-51-5    | Dimethoate                                                                                     | 1.0           | 75-21-8    | Ethylene oxide 0.1                                                      |
| 61-82-5    | Amitrole                                                                                       | 0.1           | 75-25-2    | Bromoform (Tribromomethane) 1.0                                         |
| 62-53-3    | Aniline                                                                                        | 1.0           | 75-27-4    | Dichlorobromomethane 1.0                                                |
| 62-55-5    | Thioacetamide                                                                                  | 0.1           | 75-34-3    | Ethylidene dichloride 1.0                                               |
| 62-56-6    | Thiourea                                                                                       | 0.1           | 75-35-4    | Vinylidene chloride 1.0                                                 |
|            |                                                                                                |               | 75-43-4    | Dichlorofluoromethane (HCFC-21) 1.0                                     |
|            |                                                                                                |               | 75-44-5    | Phosgene 1.0                                                            |

\*C.I. means "Color Index"

| CAS Number | Chemical Name                                                                                | DeMinimis Concentration | CAS Number | Chemical Name                                          | DeMinimis Concentration |
|------------|----------------------------------------------------------------------------------------------|-------------------------|------------|--------------------------------------------------------|-------------------------|
| 75-45-6    | Chlorodifluoromethane (HCFC-22)                                                              | 1.0                     | 79-34-5    | 1,1,2,2-Tetrachloroethane                              | 1.0                     |
| 75-55-8    | Propyleneimine                                                                               | 0.1                     | 79-44-7    | Dimethylcarbaryl chloride                              | 0.1                     |
| 75-56-9    | Propylene oxide                                                                              | 0.1                     | 79-46-9    | 2-Nitropropane                                         | 0.1                     |
| 75-63-8    | Bromotrifluoromethane<br>(Halon 1301)                                                        | 1.0                     | 80-05-7    | 4,4'-Isopropylidenediphenol                            | 1.0                     |
| 75-65-0    | tert-Butyl alcohol                                                                           | 1.0                     | 80-15-9    | Cumene hydroperoxide                                   | 1.0                     |
| 75-68-3    | 1-Chloro-1,1-difluoroethane<br>(HCFC-142b)                                                   | 1.0                     | 80-62-6    | Methyl methacrylate                                    | 1.0                     |
| 75-69-4    | Trichlorofluoromethane (CFC-11)                                                              | 1.0                     | 81-07-2    | Saccharin (manufacturing, no<br>supplier notification) | 0.1                     |
| 75-71-8    | Dichlorodifluoromethane (CFC-12)                                                             | 1.0                     | 81-88-9    | C.I. Food Red 15                                       |                         |
| 75-72-9    | Chlorotrifluoromethane (CFC-13)                                                              | 1.0                     | 82-28-0    | 1-Amino-2-methylantraquinone                           | 0.1                     |
| 75-86-5    | 2-Methylacetonitrile                                                                         | 1.0                     | 82-68-8    | Quintozone                                             | 1.0                     |
| 75-88-7    | 2-Chloro-1,1,1-trifluoroethane<br>(HCFC-133a)                                                | 1.0                     |            | [Pentachloronitrobenzene]                              |                         |
| 76-01-7    | Pentachloroethane                                                                            | 1.0                     | 84-74-2    | Dibutyl phthalate                                      | 1.0                     |
| 76-02-8    | Trichloroacetyl chloride                                                                     | 1.0                     | 85-01-8    | Phenanthrene                                           | 1.0                     |
| 76-06-2    | Chloropicrin                                                                                 | 1.0                     | 85-44-9    | Phthalic anhydride                                     | 1.0                     |
| 76-13-1    | Freon 113<br>[Ethane, 1,1,2-trichloro-1,2,2,-<br>trifluoro-]                                 | 1.0                     | 86-30-6    | N-Nitrosodiphenylamine                                 | 1.0                     |
| 76-14-2    | Dichlorotetrafluoroethane<br>(CFC-114)                                                       | 1.0                     | 87-62-7    | 2,6-Xylidine                                           | 0.1                     |
| 76-15-3    | Monochloropentafluoroethane<br>(CFC-115)                                                     | 1.0                     | 87-68-3    | Hexachloro-1,3-butadiene                               | 1.0                     |
| 76-44-8    | Heptachlor<br>[1,4,5,6,7,8,8-Heptachloro-<br>3a,4,7,7a-tetrahydro-4,7-<br>methano-1H-indene] | 0.1                     | 87-86-5    | Pentachlorophenol (PCP)                                | 0.1                     |
| 76-87-9    | Triphenyltin hydroxide                                                                       | 1.0                     | 88-06-2    | 2,4,6-Trichlorophenol                                  | 0.1                     |
| 77-47-4    | Hexachlorocyclopentadiene                                                                    | 1.0                     | 88-75-5    | 2-Nitrophenol                                          | 1.0                     |
| 77-73-6    | Dicyclopentadiene                                                                            | 1.0                     | 88-85-7    | Dinitrobutyl phenol (Dinoseb)                          | 1.0                     |
| 77-78-1    | Dimethyl sulfate                                                                             | 0.1                     | 88-89-1    | Picric acid                                            | 1.0                     |
| 78-48-8    | S,S,S-Tributyltrithiophosphate<br>(DEF)                                                      | 1.0                     | 90-04-0    | o-Anisidine                                            | 0.1                     |
| 78-84-2    | Isobutyraldehyde                                                                             | 1.0                     | 90-43-7    | 2-Phenylphenol                                         | 1.0                     |
| 78-87-5    | 1,2-Dichloropropane                                                                          | 1.0                     | 90-94-8    | Michler's ketone                                       | 0.1                     |
| 78-88-6    | 2,3-Dichloropropene                                                                          | 1.0                     | 91-08-7    | Toluene-2,6-diisocyanate                               | 0.1                     |
| 78-92-2    | sec-Butyl alcohol                                                                            | 1.0                     | 91-20-3    | Naphthalene                                            | 1.0                     |
| 78-93-3    | Methyl ethyl ketone                                                                          | 1.0                     | 91-22-5    | Quinoline                                              | 1.0                     |
| 79-00-5    | 1,1,2-Trichloroethane                                                                        | 1.0                     | 91-59-8    | beta-Naphthylamine                                     | 0.1                     |
| 79-01-6    | Trichloroethylene                                                                            | 0.1                     | 91-94-1    | 3,3'-Dichlorobenzidine                                 | 0.1                     |
| 79-06-1    | Acrylamide                                                                                   | 0.1                     | 92-52-4    | Biphenyl                                               | 1.0                     |
| 79-10-7    | Acrylic acid                                                                                 | 1.0                     | 92-67-1    | 4-Aminobiphenyl                                        | 0.1                     |
| 79-11-8    | Chloroacetic acid                                                                            | 1.0                     | 92-87-5    | Benzidine                                              | 0.1                     |
| 79-19-6    | Thiosemicarbazide                                                                            | 1.0                     | 92-93-3    | 4-Nitrobiphenyl                                        | 0.1                     |
| 79-21-0    | Peracetic acid                                                                               | 1.0                     | 93-65-2    | Mecoprop                                               | 0.1                     |
| 79-22-1    | Methyl chlorocarbonate                                                                       | 1.0                     | 94-11-1    | 2,4-D isopropyl ester                                  | 0.1                     |
|            |                                                                                              |                         | 94-36-0    | Benzoyl peroxide                                       | 1.0                     |
|            |                                                                                              |                         | 94-58-6    | Dihydrosafrole                                         | 0.1                     |
|            |                                                                                              |                         | 94-59-7    | Safrole                                                | 0.1                     |
|            |                                                                                              |                         | 94-74-6    | Methoxone                                              | 0.1                     |
|            |                                                                                              |                         |            | ((4-Chloro-2-methylphenoxy)<br>acetic acid) (MCPA)     |                         |
|            |                                                                                              |                         | 94-75-7    | 2,4-D [Acetic acid, (2,4-<br>dichlorophenoxy)-]        | 0.1                     |
|            |                                                                                              |                         | 94-80-4    | 2,4-D butyl ester                                      | 0.1                     |

| CAS Number | Chemical Name                                           | DeMinimis Concentration | CAS Number | Chemical Name                                  | DeMinimis Concentration |
|------------|---------------------------------------------------------|-------------------------|------------|------------------------------------------------|-------------------------|
| 94-82-6    | 2,4-DB                                                  | 1.0                     | 104-94-9   | p-Anisidine                                    | 1.0                     |
| 95-47-6    | o-Xylene                                                | 1.0                     | 105-67-9   | 2,4-Dimethylphenol                             | 1.0                     |
| 95-48-7    | o-Cresol                                                | 1.0                     | 106-42-3   | p-Xylene                                       | 1.0                     |
| 95-50-1    | 1,2-Dichlorobenzene                                     | 1.0                     | 106-44-5   | p-Cresol                                       | 1.0                     |
| 95-53-4    | o-Toluidine                                             | 0.1                     | 106-46-7   | 1,4-Dichlorobenzene                            | 0.1                     |
| 95-54-5    | 1,2-Phenylenediamine                                    | 1.0                     | 106-47-8   | p-Chloroaniline                                | 0.1                     |
| 95-63-6    | 1,2,4-Trimethylbenzene                                  | 1.0                     | 106-50-3   | p-Phenylenediamine                             | 1.0                     |
| 95-69-2    | p-Chloro-o-toluidine                                    | 0.1                     | 106-51-4   | Quinone                                        | 1.0                     |
| 95-80-7    | 2,4-Diaminotoluene                                      | 0.1                     | 106-88-7   | 1,2-Butylene oxide                             | 1.0                     |
| 95-95-4    | 2,4,5-Trichlorophenol                                   | 1.0                     | 106-89-8   | Epichlorohydrin                                | 0.1                     |
| 96-09-3    | Styrene oxide                                           | 0.1                     | 106-93-4   | 1,2-Dibromoethane                              | 0.1                     |
| 96-12-8    | 1,2-Dibromo-3-chloropropane                             | 0.1                     |            | (Ethylene dibromide)                           |                         |
|            | (DBCP)                                                  |                         | 106-99-0   | 1,3-Butadiene                                  | 0.1                     |
| 96-18-4    | 1,2,3-Trichloropropane                                  | 0.1                     | 107-02-8   | Acrolein                                       | 1.0                     |
| 96-33-3    | Methyl acrylate                                         | 1.0                     | 107-05-1   | Allyl chloride                                 | 1.0                     |
| 96-45-7    | Ethylene thiourea                                       | 0.1                     | 107-06-2   | 1,2-Dichloroethane (Ethylene                   | 0.1                     |
| 97-23-4    | Dichlorophene                                           | 1.0                     |            | dichloride)                                    |                         |
|            | [2,2'-Methylenebis(4-chlorophenol)]                     |                         | 107-11-9   | Allylamine                                     | 1.0                     |
| 97-56-3    | C.I. Solvent Yellow 3                                   | 1.0                     | 107-13-1   | Acrylonitrile                                  | 0.1                     |
| 98-07-7    | Benzoic trichloride                                     | 0.1                     | 107-18-6   | Allyl alcohol                                  | 1.0                     |
|            | (Benzotrichloride)                                      |                         | 107-19-7   | Propargyl alcohol                              | 1.0                     |
| 98-82-8    | Cumene                                                  | 1.0                     | 107-21-1   | Ethylene glycol                                | 1.0                     |
| 98-86-2    | Acetophenone                                            | 1.0                     | 107-30-2   | Chloromethyl methyl ether                      | 0.1                     |
| 98-87-3    | Benzal chloride                                         | 1.0                     | 108-05-4   | Vinyl acetate                                  | 0.1                     |
| 98-88-4    | Benzoyl chloride                                        | 1.0                     | 108-10-1   | Methyl isobutyl ketone                         | 1.0                     |
| 98-95-3    | Nitrobenzene                                            | 0.1                     | 108-31-6   | Maleic anhydride                               | 1.0                     |
| 99-30-9    | Dichloran [2,6-Dichloro-4-nitroaniline]                 | 1.0                     | 108-38-3   | m-Xylene                                       | 1.0                     |
|            |                                                         |                         | 108-39-4   | m-Cresol                                       | 1.0                     |
| 99-55-8    | 5-Nitro-o-toluidine                                     | 1.0                     | 108-45-2   | 1,3-Phenylenediamine                           | 1.0                     |
| 99-59-2    | 5-Nitro-o-anisidine                                     | 1.0                     | 108-60-1   | Bis(2-chloro-1-methylethyl) ether              | 1.0                     |
| 99-65-0    | m-Dinitrobenzene                                        | 1.0                     | 108-88-3   | Toluene                                        | 1.0                     |
| 100-01-6   | p-Nitroaniline                                          | 1.0                     | 108-90-7   | Chlorobenzene                                  | 1.0                     |
| 100-02-7   | 4-Nitrophenol                                           | 1.0                     | 108-93-0   | Cyclohexanol                                   | 1.0                     |
| 100-25-4   | p-Dinitrobenzene                                        | 1.0                     | 108-95-2   | Phenol                                         | 1.0                     |
| 100-41-4   | Ethylbenzene                                            | 1.0                     | 109-06-8   | 2-Methylpyridine                               | 1.0                     |
| 100-42-5   | Styrene                                                 | 0.1                     | 109-77-3   | Malononitrile                                  | 1.0                     |
| 100-44-7   | Benzyl chloride                                         | 1.0                     | 109-86-4   | 2-Methoxyethanol                               | 1.0                     |
| 100-75-4   | N-Nitrosopiperidine                                     | 0.1                     | 110-54-3   | n-Hexane                                       | 1.0                     |
| 101-05-3   | Anilazine                                               | 1.0                     | 110-57-6   | trans-1,4-Dichloro-2-butene                    | 1.0                     |
|            | [4,6-Dichloro-N-(2-chlorophenyl)-1,3,5-triazin-2-amine] |                         | 110-80-5   | 2-Ethoxyethanol                                | 1.0                     |
| 101-14-4   | 4,4'-Methylenebis(2-chloroaniline) (MBOCA)              | 0.1                     | 110-82-7   | Cyclohexane                                    | 1.0                     |
|            |                                                         |                         | 110-86-1   | Pyridine                                       | 1.0                     |
| 101-61-1   | 4,4'-Methylenebis(N,N-dimethyl)benzenamine              | 0.1                     | 111-42-2   | Diethanolamine                                 | 1.0                     |
|            |                                                         |                         | 111-44-4   | Bis(2-chloroethyl) ether                       | 1.0                     |
| 101-77-9   | 4,4'-Methylenedianiline                                 | 0.1                     | 111-91-1   | Bis(2-chloroethoxy) methane                    | 1.0                     |
| 101-80-4   | 4,4'-Diaminodiphenyl ether                              | 0.1                     | 114-26-1   | Propoxur                                       | 1.0                     |
| 101-90-6   | Diglycidyl resorcinol ether                             | 0.1                     |            | [Phenol, 2-(1-methylethoxy)-, methylcarbamate] |                         |
| 104-12-1   | p-Chlorophenyl isocyanate                               | 1.0                     | 115-07-1   | Propylene (Propene)                            | 1.0                     |
|            |                                                         |                         | 115-28-6   | Chlorendic acid                                | 0.1                     |

\*C.I. means "Color Index"

| CAS Number | Chemical Name                                                                   | DeMinimis Concentration | CAS Number | Chemical Name                                                                                                                             | DeMinimis Concentration |
|------------|---------------------------------------------------------------------------------|-------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 115-32-2   | Dicofol                                                                         | 1.0                     | 134-29-2   | o-Anisidine hydrochloride                                                                                                                 | 0.1                     |
|            | [Benzenemethanol, 4-chloro-.alpha.-4-(chlorophenyl)-.alpha.-(trichloromethyl)-] |                         | 134-32-7   | alpha-Naphthylamine                                                                                                                       | 0.1                     |
| 116-06-3   | Aldicarb                                                                        | 1.0                     | 135-20-6   | Cupferron                                                                                                                                 | 0.1                     |
| 117-79-3   | 2-Aminoanthraquinone                                                            | 0.1                     |            | [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]                                                                                        |                         |
| 117-81-7   | Di(2-ethylhexyl) phthalate (DEHP)                                               | 0.1                     | 136-45-8   | Dipropyl isocinchomeronate                                                                                                                | 1.0                     |
| 118-74-1   | Hexachlorobenzene                                                               | 0.1                     | 137-26-8   | Thiram                                                                                                                                    | 1.0                     |
| 119-90-4   | 3,3'-Dimethoxybenzidine                                                         | 0.1                     | 137-41-7   | Potassium N-methyldithio-carbamate                                                                                                        | 1.0                     |
| 119-93-7   | 3,3'-Dimethylbenzidine (o-Tolidine)                                             | 0.1                     | 137-42-8   | Metham sodium (Sodium methyldithiocarbamate)                                                                                              | 1.0                     |
| 120-12-7   | Anthracene                                                                      | 1.0                     | 138-93-2   | Disodium cyanodithioimido-carbonate                                                                                                       | 1.0                     |
| 120-36-5   | 2,4-DP                                                                          | 0.1                     | 139-13-9   | Nitrilotriacetic acid                                                                                                                     | 0.1                     |
| 120-58-1   | Isosafrole                                                                      | 1.0                     | 139-65-1   | 4,4'-Thiodianiline                                                                                                                        | 0.1                     |
| 120-71-8   | p-Cresidine                                                                     | 0.1                     | 140-88-5   | Ethyl acrylate                                                                                                                            | 0.1                     |
| 120-80-9   | Catechol                                                                        | 1.0                     | 141-32-2   | Butyl acrylate                                                                                                                            | 1.0                     |
| 120-82-1   | 1,2,4-Trichlorobenzene                                                          | 1.0                     | 142-59-6   | Nabam                                                                                                                                     | 1.0                     |
| 120-83-2   | 2,4-Dichlorophenol                                                              | 1.0                     | 148-79-8   | Thiabendazole                                                                                                                             | 1.0                     |
| 121-14-2   | 2,4-Dinitrotoluene                                                              | 0.1                     |            | [2-(4-Thiazolyl)-1H-benzimidazole]                                                                                                        |                         |
| 121-44-8   | Triethylamine                                                                   | 1.0                     | 149-30-4   | 2-Mercaptobenzothiazole (MBT)                                                                                                             | 1.0                     |
| 121-69-7   | N,N-Dimethylaniline                                                             | 1.0                     | 150-50-5   | Merphos                                                                                                                                   | 1.0                     |
| 121-75-5   | Malathion                                                                       | 1.0                     | 150-68-5   | Monuron                                                                                                                                   | 1.0                     |
| 122-34-9   | Simazine                                                                        | 1.0                     | 151-56-4   | Ethyleneimine (Aziridine)                                                                                                                 | 0.1                     |
| 122-39-4   | Diphenylamine                                                                   | 1.0                     | 156-10-5   | p-Nitrosodiphenylamine                                                                                                                    | 1.0                     |
| 122-66-7   | 1,2-Diphenylhydrazine (Hydrazobenzene)                                          | 0.1                     | 156-62-7   | Calcium cyanamide                                                                                                                         | 1.0                     |
| 123-31-9   | Hydroquinone                                                                    | 1.0                     | 298-00-0   | Methyl parathion                                                                                                                          | 1.0                     |
| 123-38-6   | Propionaldehyde                                                                 | 1.0                     | 300-76-5   | Naled                                                                                                                                     | 1.0                     |
| 123-63-7   | Paraldehyde                                                                     | 1.0                     | 301-12-2   | Oxydemeton methyl                                                                                                                         | 1.0                     |
| 123-72-8   | Butyraldehyde                                                                   | 1.0                     |            | [S-(2-(Ethylsulfinyl)ethyl) O,O-dimethyl ester phosphorothioic acid]                                                                      |                         |
| 123-91-1   | 1,4-Dioxane                                                                     | 0.1                     | 302-01-2   | Hydrazine                                                                                                                                 | 0.1                     |
| 124-40-3   | Dimethylamine                                                                   | 1.0                     | 306-83-2   | 2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)                                                                                             | 1.0                     |
| 124-73-2   | Dibromotetrafluoroethane (Halon 2402)                                           | 1.0                     | 309-00-2   | Aldrin                                                                                                                                    | 1.0                     |
| 126-72-7   | Tris(2,3-dibromopropyl) phosphate                                               | 0.1                     |            | [1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-] |                         |
| 126-98-7   | Methacrylonitrile                                                               | 1.0                     | 314-40-9   | Bromacil                                                                                                                                  | 1.0                     |
| 126-99-8   | Chloroprene                                                                     | 1.0                     |            | (5-Bromo-6-methyl-3-(1-methyl-propyl)-2,4(1H,3H)-pyrimidine-dione)                                                                        |                         |
| 127-18-4   | Tetrachloroethylene (Perchloroethylene)                                         | 0.1                     | 319-84-6   | alpha-Hexachlorocyclohexane                                                                                                               | 1.0                     |
| 128-03-0   | Potassium dimethyldithiocarbamate                                               | 1.0                     | 330-54-1   | Diuron                                                                                                                                    | 1.0                     |
| 128-04-1   | Sodium dimethyldithiocarbamate                                                  | 1.0                     | 330-55-2   | Linuron                                                                                                                                   | 1.0                     |
| 128-66-5   | C.I. Vat Yellow 4                                                               | 1.0                     | 333-41-5   | Diazinon                                                                                                                                  | 1.0                     |
| 131-11-3   | Dimethyl phthalate                                                              | 1.0                     | 334-88-3   | Diazomethane                                                                                                                              | 1.0                     |
| 131-52-2   | Sodium pentachlorophenate                                                       | 1.0                     | 353-59-3   | Bromochlorodifluoromethane (Halon 1211)                                                                                                   | 1.0                     |
| 132-27-4   | Sodium o-phenylphenoxide                                                        | 0.1                     |            |                                                                                                                                           |                         |
| 132-64-9   | Dibenzofuran                                                                    | 1.0                     |            |                                                                                                                                           |                         |
| 133-06-2   | Captan                                                                          | 1.0                     |            |                                                                                                                                           |                         |
|            | [1H-Isoindole-1,3(2H)-dione, 3a, 4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]  |                         |            |                                                                                                                                           |                         |
| 133-07-3   | Folpet                                                                          | 1.0                     |            |                                                                                                                                           |                         |
| 133-90-4   | Chloramben                                                                      | 1.0                     |            |                                                                                                                                           |                         |
|            | [Benzoic acid, 3-amino-2,5-dichloro-]                                           |                         |            |                                                                                                                                           |                         |

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|------------|-------------------------------------------------------------------------------------------------------|-------------------------|------------|-----------------------------------------------------------------------------------------------|-------------------------|
| 354-11-0   | 1,1,1,2-Tetrachloro-2-fluoroethane (HCFC-121a)                                                        | 1.0                     | 584-84-9   | Toluene-2,4-diisocyanate                                                                      | 0.1                     |
| 354-14-3   | 1,1,2,2-Tetrachloro-1-fluoroethane (HCFC-121)                                                         | 1.0                     | 593-60-2   | Vinyl bromide                                                                                 | 0.1                     |
| 354-23-4   | 1,2-Dichloro-1,1,2-trifluoroethane (HCFC-123a)                                                        | 1.0                     | 594-42-3   | Perchloromethyl mercaptan                                                                     | 1.0                     |
| 354-25-6   | 1-Chloro-1,1,2,2-tetrafluoroethane (HCFC-124a)                                                        | 1.0                     | 606-20-2   | 2,6-Dinitrotoluene                                                                            | 0.1                     |
| 357-57-3   | Brucine                                                                                               | 1.0                     | 612-82-8   | 3,3'-Dimethylbenzidine dihydrochloride (o-Tolidine dihydrochloride)                           | 0.1                     |
| 422-44-6   | 1,2-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225bb)                                                | 1.0                     | 612-83-9   | 3,3'-Dichlorobenzidine dihydrochloride                                                        | 0.1                     |
| 422-48-0   | 2,3-Dichloro-1,1,1,2,3-pentafluoropropane (HCFC-225ba)                                                | 1.0                     | 615-05-4   | 2,4-Diaminoanisole                                                                            | 0.1                     |
| 422-56-0   | 3,3-Dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)                                                | 1.0                     | 615-28-1   | 1,2-Phenylenediamine dihydrochloride                                                          | 1.0                     |
| 431-86-7   | 1,2-Dichloro-1,1,3,3,3-pentafluoropropane (HCFC-225da)                                                | 1.0                     | 621-64-7   | N-Nitrosodi-n-propylamine                                                                     | 0.1                     |
| 460-35-5   | 3-Chloro-1,1,1-trifluoropropane (HCFC-253fb)                                                          | 1.0                     | 624-18-0   | 1,4-Phenylenediamine dihydrochloride                                                          | 1.0                     |
| 463-58-1   | Carbonyl sulfide                                                                                      | 1.0                     | 624-83-9   | Methyl isocyanate                                                                             | 1.0                     |
| 465-73-6   | Isodrin                                                                                               | 1.0                     | 630-20-6   | 1,1,1,2-Tetrachloroethane                                                                     | 1.0                     |
| 492-80-8   | C.I. Solvent Yellow 34 (Auramine)                                                                     | 0.1                     | 636-21-5   | o-Toluidine hydrochloride                                                                     | 0.1                     |
| 505-60-2   | Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]]                                                         | 0.1                     | 639-58-7   | Triphenyltin chloride                                                                         | 1.0                     |
| 507-55-1   | 1,3-Dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)                                                | 1.0                     | 680-31-9   | Hexamethylphosphoramide                                                                       | 0.1                     |
| 510-15-6   | Chlorobenzilate [Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester] | 1.0                     | 684-93-5   | N-Nitroso-N-methylurea                                                                        | 0.1                     |
| 528-29-0   | o-Dinitrobenzene                                                                                      | 1.0                     | 709-98-8   | Propanil (N-(3,4-Dichlorophenyl) propanamide)                                                 | 1.0                     |
| 532-27-4   | 2-Chloroacetophenone                                                                                  | 1.0                     | 759-73-9   | N-Nitroso-N-ethylurea                                                                         | 0.1                     |
| 533-74-4   | Dazomet (Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione)                                       | 1.0                     | 759-94-4   | Ethyl dipropylthiocarbamate (EPTC)                                                            | 1.0                     |
| 534-52-1   | 4,6-Dinitro-o-cresol                                                                                  | 1.0                     | 764-41-0   | 1,4-Dichloro-2-butene                                                                         | 1.0                     |
| 540-59-0   | 1,2-Dichloroethylene                                                                                  | 1.0                     | 812-04-4   | 1,1-Dichloro-1,2,2-trifluoroethane (HCFC-123b)                                                | 1.0                     |
| 541-41-3   | Ethyl chloroformate                                                                                   | 1.0                     | 834-12-8   | Ametryn (N-Ethyl-N'-(1-methylethyl)-6-(methylthio)-1,3,5,-triazine-2,4-diamine)               | 1.0                     |
| 541-53-7   | 2,4-Dithiobiuret                                                                                      | 1.0                     | 842-07-9   | C.I. Solvent Yellow 14                                                                        | 1.0                     |
| 541-73-1   | 1,3-Dichlorobenzene                                                                                   | 1.0                     | 872-50-4   | N-Methyl-2-pyrrolidone                                                                        | 1.0                     |
| 542-75-6   | 1,3-Dichloropropylene                                                                                 | 0.1                     | 924-16-3   | N-Nitrosodi-n-butylamine                                                                      | 0.1                     |
| 542-76-7   | 3-Chloropropionitrile                                                                                 | 1.0                     | 924-42-5   | N-Methylolacrylamide                                                                          | 1.0                     |
| 542-88-1   | Bis(chloromethyl) ether                                                                               | 0.1                     | 957-51-7   | Diphenamid                                                                                    | 1.0                     |
| 554-13-2   | Lithium carbonate                                                                                     | 1.0                     | 961-11-5   | Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester] | 1.0                     |
| 556-61-6   | Methyl isothiocyanate [Isothiocyanatomethane]                                                         | 1.0                     | 989-38-8   | C.I. Basic Red 1                                                                              | 1.0                     |
| 563-47-3   | 3-Chloro-2-methyl-1-propene                                                                           | 0.1                     | 1114-71-2  | Pebulate [Butylethylcarbamothioic acid S-propyl ester]                                        | 1.0                     |
| 569-64-2   | C.I. Basic Green 4                                                                                    | 1.0                     | 1120-71-4  | Propane sultone                                                                               | 0.1                     |
|            |                                                                                                       |                         | 1134-23-2  | Cycloate                                                                                      | 1.0                     |
|            |                                                                                                       |                         | 1163-19-5  | Decabromodiphenyl oxide                                                                       | 1.0                     |
|            |                                                                                                       |                         | 1313-27-5  | Molybdenum trioxide                                                                           | 1.0                     |
|            |                                                                                                       |                         | 1314-20-1  | Thorium dioxide                                                                               | 1.0                     |

\*C.I. means "Color Index"

| CAS Number | Chemical Name                                                     | DeMinimis Concentration | CAS Number | Chemical Name                                                               | DeMinimis Concentration |
|------------|-------------------------------------------------------------------|-------------------------|------------|-----------------------------------------------------------------------------|-------------------------|
| 1319-77-3  | Cresol (mixed isomers)                                            | 1.0                     | 1982-69-0  | Sodium dicamba                                                              | 1.0                     |
| 1320-18-9  | 2,4-D propylene glycol butyl ether ester                          | 0.1                     |            | [3,6-Dichloro-2-methoxybenzoic acid, sodium salt]                           |                         |
| 1330-20-7  | Xylene (mixed isomers)                                            | 1.0                     | 1983-10-4  | Tributyltin fluoride                                                        | 1.0                     |
| 1332-21-4  | Asbestos (friable)                                                | 0.1                     | 2032-65-7  | Methiocarb                                                                  | 1.0                     |
| 1335-87-1  | Hexachloronaphthalene                                             | 1.0                     | 2155-70-6  | Tributyltin methacrylate                                                    | 1.0                     |
| 1336-36-3  | Polychlorinated biphenyls (PCBs)                                  | 0.1                     | 2164-07-0  | Dipotassium endothall                                                       | 1.0                     |
| 1344-28-1  | Aluminum oxide (fibrous forms)                                    | 1.0                     |            | [7-Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic acid, dipotassium salt]        |                         |
| 1464-53-5  | Diepoxybutane                                                     | 0.1                     | 2164-17-2  | Fluometuron                                                                 | 1.0                     |
| 1563-66-2  | Carbofuran                                                        | 1.0                     |            | [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]                        |                         |
| 1582-09-8  | Trifluralin                                                       | 1.0                     |            | [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]               |                         |
|            |                                                                   |                         | 2212-67-1  | Molinate                                                                    | 1.0                     |
| 1634-04-4  | Methyl tert-butyl ether                                           | 1.0                     |            | (1H-Azepine-1-carbothioic acid, hexahydro-S-ethyl ester)                    |                         |
| 1649-08-7  | 1,2-Dichloro-1,1-difluoroethane (HCFC-132b)                       | 1.0                     | 2234-13-1  | Octachloronaphthalene                                                       | 1.0                     |
| 1689-84-5  | Bromoxynil                                                        | 1.0                     | 2300-66-5  | Dimethylamine dicamba                                                       | 1.0                     |
|            | (3,5-Dibromo-4-hydroxybenzonitrile)                               |                         | 2303-16-4  | Diallate                                                                    | 1.0                     |
| 1689-99-2  | Bromoxynil octanoate                                              | 1.0                     |            | [Carbamothioic acid, bis(1-methyl-ethyl)-S-(2,3-dichloro-2-propenyl) ester] |                         |
|            | (Octanoic acid, 2,6-dibromo-4-cyanophenyl ester)                  |                         | 2303-17-5  | Triallate                                                                   | 1.0                     |
| 1717-00-6  | 1,1-Dichloro-1-fluoroethane (HCFC-141b)                           | 1.0                     | 2312-35-8  | Propargite                                                                  | 1.0                     |
| 1836-75-5  | Nitrofen                                                          | 0.1                     | 2439-01-2  | Chinomethionat                                                              | 1.0                     |
|            | [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]                       |                         |            | [6-Methyl-1,3-dithiolo[4,5-b]-quinoxalin-2-one]                             |                         |
| 1861-40-1  | Benfluralin                                                       | 1.0                     | 2439-10-3  | Dodine                                                                      | 1.0                     |
|            | (N-Butyl-N-ethyl-2,6-dinitro-4-(trifluoromethyl)benzenamine)      |                         | 2524-03-0  | [Dodecylguanidine monoacetate]                                              |                         |
| 1897-45-6  | Chlorothalonil                                                    | 1.0                     | 2602-46-2  | Dimethyl chlorothiophosphate                                                | 1.0                     |
|            | [1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-]                 |                         | 2655-15-4  | C.I. Direct Blue 6                                                          | 0.1                     |
| 1910-42-5  | Paraquat dichloride                                               | 1.0                     |            | 2,3,5-Trimethylphenyl methyl carbamate                                      | 1.0                     |
| 1912-24-9  | Atrazine                                                          | 0.1                     | 2699-79-8  | Sulfuryl fluoride (Vikane)                                                  | 1.0                     |
|            | (6-Chloro-N-ethyl-N'-(1-methyl-ethyl)-1,3,5-triazine-2,4-diamine) |                         | 2702-72-9  | 2,4-D sodium salt                                                           | 0.1                     |
| 1918-00-9  | Dicamba                                                           | 1.0                     | 2832-40-8  | C.I. Disperse Yellow 3                                                      | 1.0                     |
|            | (3,6-Dichloro-2-methoxybenzoic acid)                              |                         | 2837-89-0  | 2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124)                               | 1.0                     |
| 1918-02-1  | Picloram                                                          | 1.0                     | 2971-38-2  | 2,4-D Chlorocrotyl ester                                                    | 0.1                     |
| 1918-16-7  | Propachlor                                                        | 1.0                     | 3118-97-6  | C.I. Solvent Orange 7                                                       | 1.0                     |
|            | [2-Chloro-N-(1-methylethyl)-N-phenylacetamide]                    |                         | 3383-96-8  | Temephos                                                                    | 1.0                     |
| 1928-43-4  | 2,4-D 2-ethylhexyl ester                                          | 0.1                     | 3653-48-3  | Methoxone sodium salt                                                       | 0.1                     |
| 1929-73-3  | 2,4-D butoxyethyl ester                                           | 0.1                     |            | ((4-Chloro-2-methylphenoxy) acetate sodium salt)                            |                         |
| 1929-82-4  | Nitrapyrin                                                        | 1.0                     | 3761-53-3  | C.I. Food Red 5                                                             | 0.1                     |
|            | (2-Chloro-6-(trichloromethyl)-pyridine)                           |                         | 4080-31-3  | 1-(3-Chloroallyl)-3,5,7-triaza-1-azoniaadamantane chloride                  | 1.0                     |
| 1937-37-7  | C.I. Direct Black 38                                              | 0.1                     | 4170-30-3  | Crotonaldehyde                                                              | 1.0                     |
|            |                                                                   |                         | 4549-40-0  | N-Nitrosomethylvinylamine                                                   | 0.1                     |
|            |                                                                   |                         | 4680-78-8  | C.I. Acid Green 3                                                           | 1.0                     |

| CAS Number | Chemical Name                                                                                                                                                                             | De Minimis Concentration | CAS Number | Chemical Name                                                                                                                                    | De Minimis Concentration |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 5234-68-4  | Carboxin<br>(5,6-Dihydro-2-methyl-N-phenyl-1,4-oxathiin-3-carboxamide)                                                                                                                    | 1.0                      | 7696-12-0  | Tetramethrin<br>[2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (1,3,4,5,6,7-hexahydro-1,3-dioxo-2H-isoindol-2-yl)methyl ester] | 1.0                      |
| 5598-13-0  | Chlorpyrifos methyl<br>[O,O-Dimethyl-O-(3,5,6-trichloro-2-pyridyl)phosphorothioate]                                                                                                       | 1.0                      | 7697-37-2  | Nitric acid                                                                                                                                      | 1.0                      |
| 5902-51-2  | Terbacil<br>[5-Chloro-3-(1,1-dimethylethyl)-6-methyl-2,4(1H,3H)-pyrimidinedione]                                                                                                          | 1.0                      | 7723-14-0  | Phosphorus (yellow or white)                                                                                                                     | 1.0                      |
| 6459-94-5  | C.I. Acid Red 114                                                                                                                                                                         | 0.1                      | 7726-95-6  | Bromine                                                                                                                                          | 1.0                      |
| 7287-19-6  | Prometryn<br>[N,N'-Bis(1-methylethyl)-6-methylthio-1,3,5-triazine-2,4-diamine]                                                                                                            | 1.0                      | 7758-01-2  | Potassium bromate                                                                                                                                | 0.1                      |
| 7429-90-5  | Aluminum (fume or dust)                                                                                                                                                                   | 1.0                      | 7782-41-4  | Fluorine                                                                                                                                         | 1.0                      |
| 7439-92-1  | Lead                                                                                                                                                                                      | 0.1                      | 7782-49-2  | Selenium                                                                                                                                         | 1.0                      |
| 7439-96-5  | Manganese                                                                                                                                                                                 | 1.0                      | 7782-50-5  | Chlorine                                                                                                                                         | 1.0                      |
| 7439-97-6  | Mercury                                                                                                                                                                                   | 1.0                      | 7786-34-7  | Mevinphos                                                                                                                                        | 1.0                      |
| 7440-02-0  | Nickel                                                                                                                                                                                    | 0.1                      | 7803-51-2  | Phosphine                                                                                                                                        | 1.0                      |
| 7440-22-4  | Silver                                                                                                                                                                                    | 1.0                      | 8001-35-2  | Toxaphene                                                                                                                                        | 0.1                      |
| 7440-28-0  | Thallium                                                                                                                                                                                  | 1.0                      | 8001-58-9  | Creosote                                                                                                                                         | 0.1                      |
| 7440-36-0  | Antimony                                                                                                                                                                                  | 1.0                      | 9006-42-2  | Metiram                                                                                                                                          | 1.0                      |
| 7440-38-2  | Arsenic                                                                                                                                                                                   | 0.1                      | 10028-15-6 | Ozone                                                                                                                                            | 1.0                      |
| 7440-39-3  | Barium                                                                                                                                                                                    | 1.0                      | 10034-93-2 | Hydrazine sulfate                                                                                                                                | 0.1                      |
| 7440-41-7  | Beryllium                                                                                                                                                                                 | 0.1                      | 10049-04-4 | Chlorine dioxide                                                                                                                                 | 1.0                      |
| 7440-43-9  | Cadmium                                                                                                                                                                                   | 0.1                      | 10061-02-6 | trans-1,3-Dichloropropene                                                                                                                        | 0.1                      |
| 7440-47-3  | Chromium                                                                                                                                                                                  | 1.0                      | 10294-34-5 | Boron trichloride                                                                                                                                | 1.0                      |
| 7440-48-4  | Cobalt                                                                                                                                                                                    | 0.1                      | 10453-86-8 | Resmethrin<br>[[5-(Phenylmethyl)-3-furanyl]methyl-2,2-dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylate]]                                  | 1.0                      |
| 7440-50-8  | Copper                                                                                                                                                                                    | 1.0                      | 12122-67-7 | Zineb<br>[Carbamodithioic acid, 1,2-ethanedithiolbis-, zinc complex]                                                                             | 1.0                      |
| 7440-62-2  | Vanadium (fume or dust)                                                                                                                                                                   | 1.0                      | 12427-38-2 | Maneb<br>[Carbamodithioic acid, 1,2-ethanedithiolbis-, manganese complex]                                                                        | 1.0                      |
| 7440-66-6  | Zinc (fume or dust)                                                                                                                                                                       | 1.0                      | 13194-48-4 | Ethoprop<br>[Phosphorodithioic acid O-ethyl S,S-dipropyl ester]                                                                                  | 1.0                      |
| 7550-45-0  | Titanium tetrachloride                                                                                                                                                                    | 1.0                      | 13356-08-6 | Fenbutatin oxide<br>(Hexakis(2-methyl-2-phenylpropyl)distannoxane)                                                                               | 1.0                      |
| 7632-00-0  | Sodium nitrite                                                                                                                                                                            | 1.0                      | 13463-40-6 | Iron pentacarbonyl                                                                                                                               | 1.0                      |
| 7637-07-2  | Boron trifluoride                                                                                                                                                                         | 1.0                      | 13474-88-9 | 1,1-Dichloro-1,2,2,3,3-pentafluoropropane (HCFC-225cc)                                                                                           | 1.0                      |
| 7647-01-0  | Hydrochloric acid<br>(acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)                                                                     | 1.0                      | 13684-56-5 | Desmedipham                                                                                                                                      | 1.0                      |
| 7664-38-2  | Phosphoric acid                                                                                                                                                                           | 1.0                      | 14484-64-1 | Ferbam<br>[Tris(dimethylcarbamodithioato-S,S')iron]                                                                                              | 1.0                      |
| 7664-39-3  | Hydrogen fluoride                                                                                                                                                                         | 1.0                      | 15972-60-8 | Alachlor                                                                                                                                         | 1.0                      |
| 7664-41-7  | Ammonia<br>(includes anhydrous ammonia and aqueous ammonia from water dissociable ammonium salts and other sources; 10 percent of total aqueous ammonia is reportable under this listing) | 1.0                      | 16071-86-6 | C.I. Direct Brown 95                                                                                                                             | 0.1                      |
| 7664-93-9  | Sulfuric acid<br>(acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)                                                                         | 1.0                      | 16543-55-8 | N-Nitrosornicotine                                                                                                                               | 0.1                      |
|            |                                                                                                                                                                                           |                          | 17804-35-2 | Benomyl                                                                                                                                          | 1.0                      |

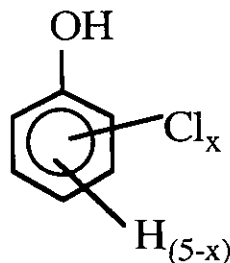
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| CAS Number | Chemical Name                                                                                   | De Minimis Concentration | CAS Number | Chemical Name                                                                        | De Minimis Concentration |
|------------|-------------------------------------------------------------------------------------------------|--------------------------|------------|--------------------------------------------------------------------------------------|--------------------------|
| 19044-88-3 | Oryzalin                                                                                        | 1.0                      | 28249-77-6 | Thiobencarb                                                                          | 1.0                      |
|            | [4-(Dipropylamino)-3,5-dinitrobenzenesulfonamide]                                               |                          |            | [Carbamic acid, diethylthio-, S-(p-chlorobenzyl)ester]                               |                          |
| 19666-30-9 | Oxydiazon                                                                                       | 1.0                      | 28407-37-6 | C.I. Direct Blue 218                                                                 | 1.0                      |
|            | [3-[2,4-Dichloro-5-(1-methylethoxy)phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2(3H)-one]     |                          | 29232-93-7 | Pirimiphos methyl                                                                    | 1.0                      |
| 20325-40-0 | 3,3'-Dimethoxybenzidine                                                                         | 0.1                      |            | [O-(2-(Diethylamino)-6-methyl-4-pyrimidinyl)-O,O-dimethyl phosphorothioate]          |                          |
|            | dihydrochloride (o-Dianisidine dihydrochloride)                                                 |                          | 30560-19-1 | Acephate                                                                             | 1.0                      |
| 20354-26-1 | Methazole                                                                                       | 1.0                      |            | (Acetylphosphoramidothioic acid O,S-dimethyl ester)                                  |                          |
|            | [2-(3,4-Dichlorophenyl)-4-methyl-1,2,4-oxadiazolidine-3,5-dione]                                |                          | 31218-83-4 | Propetamphos                                                                         | 1.0                      |
| 20816-12-0 | Osmium tetroxide                                                                                | 1.0                      |            | [3-[(Ethylamino)methoxy phosphinothioyl]oxy]-2-butenic acid, 1-methylethyl ester]    |                          |
| 20859-73-8 | Aluminum phosphide                                                                              | 1.0                      | 33089-61-1 | Amitraz                                                                              | 1.0                      |
| 21087-64-9 | Metribuzin                                                                                      | 1.0                      | 34014-18-1 | Tebuthiuron                                                                          | 1.0                      |
| 21725-46-2 | Cyanazine                                                                                       | 1.0                      |            | [N-[5-(1,1-Dimethylethyl)-1,3,4-thiadiazol-2-yl]-N,N'-dimethylurea]                  |                          |
| 22781-23-3 | Bendiocarb                                                                                      | 1.0                      |            | Dichlorotrifluoroethane                                                              | 1.0                      |
|            | [2,2-Dimethyl-1,3-benzodioxol-4-ol methylcarbamate]                                             |                          | 34077-87-7 | Diiflurbenzuron                                                                      | 1.0                      |
| 23564-05-8 | Thiophanate methyl                                                                              | 1.0                      | 35367-38-5 | Sulprofos                                                                            | 1.0                      |
| 23564-06-9 | Thiophanate ethyl                                                                               | 1.0                      | 35400-43-2 | [O-Ethyl O-[4-(methylthio)phenyl] - phosphorodithioic acid S-propyl ester]           |                          |
|            | [[1,2-Phenylenebis-(iminocarbonothioyl)]biscarbamic acid diethyl ester]                         |                          |            | Imazalil                                                                             | 1.0                      |
| 23950-58-5 | Pronamide                                                                                       | 1.0                      | 35554-44-0 | [1-[2-(2,4-Dichlorophenyl)-2-(2-propenyloxy)ethyl]-1H-imidazole]                     |                          |
| 25311-71-1 | Isofenphos                                                                                      | 1.0                      |            | 1-Bromo-1-(bromomethyl)-1,3-propanedicarbonitrile                                    | 1.0                      |
|            | [2-[[Ethoxyl[(1-methylethyl)-amino]phosphinothioyl]oxy]benzoic acid 1-methylethyl ester]        |                          | 35691-65-7 | Diethyl ethyl                                                                        | 1.0                      |
| 25321-14-6 | Dinitrotoluene (mixed isomers)                                                                  | 1.0                      | 38727-55-8 | 2,4-Diaminoanisole sulfate                                                           | 0.1                      |
| 25321-22-6 | Dichlorobenzene (mixed isomers)                                                                 | 0.1                      | 39156-41-7 | Dinocap                                                                              | 1.0                      |
| 25376-45-8 | Diaminotoluene (mixed isomers)                                                                  | 0.1                      | 39300-45-3 | Fenpropathrin                                                                        | 1.0                      |
| 26002-80-2 | Phenothrin                                                                                      | 1.0                      | 39515-41-8 | [2,2,3,3-Tetramethylcyclopropane carboxylic acid cyano(3-phenoxyphenyl)methyl ester] |                          |
|            | [2,2-Dimethyl-3-(2-methyl-1-propenyl)cyclopropanecarboxylic acid (3-phenoxyphenyl)methyl ester] |                          |            | Pendimethalin                                                                        | 1.0                      |
| 26471-62-5 | Toluene diisocyanate                                                                            | 0.1                      | 40487-42-1 | [N-(1-Ethylpropyl)-3,4-dimethyl-2,6-dinitrobenzenamine]                              |                          |
|            | (mixed isomers)                                                                                 |                          |            | Profenofos                                                                           | 1.0                      |
| 26628-22-8 | Sodium azide                                                                                    | 1.0                      | 41198-08-7 | [O-(4-Bromo-2-chlorophenyl)-O-ethyl-S-propyl-phosphorothioate]                       |                          |
| 26644-46-2 | Triforine                                                                                       | 1.0                      |            | 3,3'-Dimethylbenzidine                                                               | 0.1                      |
|            | [N,N'-[1,4-Piperazinediylbis(2,2,2-trichloroethylidene)]bisformamide]                           |                          | 41766-75-0 | dihydrofluoride (o-Tolidine dihydrofluoride)                                         |                          |
| 27314-13-2 | Norflurazon                                                                                     | 1.0                      |            | Oxyfluorfen                                                                          | 1.0                      |
|            | [4-Chloro-5-(methylamino)-2-[3-(trifluoromethyl)phenyl]-3(2H)-pyridazinone]                     |                          | 42874-03-3 | Triadimefon                                                                          | 1.0                      |
| 28057-48-9 | d-trans-Allethrin                                                                               | 1.0                      | 43121-43-3 | [1-(4-Chlorophenoxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanone]              |                          |
|            | [d-trans-Chrysanthemic acid of d-allethrine]                                                    |                          |            |                                                                                      |                          |

| CAS Number | Chemical Name                                                                                                   | DeMinimis Concentration | CAS Number | Chemical Name                                                                                                                                                   | DeMinimis Concentration |
|------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 50471-44-8 | Vinclozolin<br>[3-(3,5-Dichlorophenyl)-5-ethenyl-5-methyl-2,4-oxazolidinedione]                                 | 1.0                     | 66441-23-4 | Fenoxaprop ethyl<br>[2-(4-((6-Chloro-2-benzoxazolyl)-oxy)phenoxy)propanoic acid, ethyl ester]                                                                   | 1.0                     |
| 51235-04-2 | Hexazinone                                                                                                      | 1.0                     | 67485-29-4 | Hydramethylnon<br>[Tetrahydro-5,5-dimethyl-2(1H)-pyrimidinone[3-[4-(trifluoromethyl)phenyl]-1-[2-[4-(trifluoromethyl)phenyl]ethenyl]-2-propenylidene]hydrazone] | 1.0                     |
| 51338-27-3 | Diclofop methyl<br>[2-[4-(2,4-Dichlorophenoxy)-phenoxy]propanoic acid, methyl ester]                            | 1.0                     | 68085-85-8 | Cyhalothrin<br>[3-(2-Chloro-3,3,3-trifluoro-1-propenyl)-2,2-Dimethylcyclopropanecarboxylic acid cyano(3-phenoxyphenyl) methyl ester]                            | 1.0                     |
| 51630-58-1 | Fenvalerate<br>[4-Chloro-alpha-(1-methylethyl)-benzeneacetic acid cyano(3-phenoxyphenyl)methyl ester]           | 1.0                     | 68359-37-5 | Cyfluthrin<br>[3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropanecarboxylic acid, cyano(4-fluoro-3-phenoxyphenyl)methyl ester]                                    | 1.0                     |
| 52645-53-1 | Permethrin<br>[3-(2,2-Dichloroethenyl)-2,2-dimethylcyclopropane carboxylic acid, (3-phenoxyphenyl)methyl ester] | 1.0                     | 69409-94-5 | Fluvalinate<br>[N-[2-Chloro-4-(trifluoromethyl)-phenyl]-DL-valine(+)-cyano(3-phenoxyphenyl)methyl ester]                                                        | 1.0                     |
| 53404-19-6 | Bromacil, lithium salt<br>[2,4(1H,3H)-Pyrimidinedione, 5-bromo-6-methyl-3-(1-methylpropyl), lithium salt]       | 1.0                     | 69806-50-4 | Fluazifop butyl<br>[2-[4-[[5-(Trifluoromethyl)-2-pyridinyl]oxy]phenoxy]propanoic acid, butyl ester]                                                             | 1.0                     |
| 53404-37-8 | 2,4-D 2-ethyl-4-methylpentyl ester                                                                              | 0.1                     | 71751-41-2 | Abamectin [Avermectin B1]                                                                                                                                       | 1.0                     |
| 53404-60-7 | Dazomet, sodium salt<br>[Tetrahydro-3,5-dimethyl-2H-1,3,5-thiadiazine-2-thione, ion(1-), sodium]                | 1.0                     | 72178-02-0 | Fomesafen<br>[5-(2-Chloro-4-(trifluoromethyl)-phenoxy)-N-methylsulfonyl]-2-nitrobenzamide]                                                                      | 1.0                     |
| 55290-64-7 | Dimethipin<br>[2,3-Dihydro-5,6-dimethyl-1,4-dithiin 1,1,4,4-tetraoxide]                                         | 1.0                     | 72490-01-8 | Fenoxycarb<br>[[2-(4-Phenoxyphenoxy)ethyl-]carbamic acid ethyl ester]                                                                                           | 1.0                     |
| 55406-53-6 | 3-Iodo-2-propynyl butylcarbamate                                                                                | 1.0                     | 74051-80-2 | Sethoxydim<br>[2-[1-(Ethoxyimino)butyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one]                                                                   | 1.0                     |
| 57213-69-1 | Triclopyr triethylammonium salt                                                                                 | 1.0                     | 76578-14-8 | Quizalofop-ethyl<br>[2-[4-[(6-Chloro-2-quinoxalyl)oxy]phenoxy]propanoic acid ethyl ester]                                                                       | 1.0                     |
| 59669-26-0 | Thiodicarb                                                                                                      | 1.0                     | 77501-63-4 | Lactofen<br>[Benzoic acid, 5-[2-Chloro-4-(trifluoromethyl)phenoxy]-2-nitro-, 2-ethoxy-1-methyl-2-oxoethyl ester]                                                | 1.0                     |
| 60168-88-9 | Fenarimol<br>[.alpha.-(2-Chlorophenyl)-.alpha.-4-chlorophenyl]-5-pyrimidine-methanol]                           | 1.0                     | 82657-04-3 | Bifenthrin                                                                                                                                                      | 1.0                     |
| 60207-90-1 | Propiconazole<br>[1-[2-(2,4-Dichlorophenyl)-4-propyl-1,3-dioxolan-2-yl]-methyl-1H-1,2,4-triazole]               | 1.0                     |            |                                                                                                                                                                 |                         |
| 62476-59-9 | Acifluorfen, sodium salt<br>[5-(2-Chloro-4-(trifluoromethyl)-phenoxy)-2-nitrobenzoic acid, sodium salt]         | 1.0                     |            |                                                                                                                                                                 |                         |
| 63938-10-3 | Chlorotetrafluoroethane                                                                                         | 1.0                     |            |                                                                                                                                                                 |                         |
| 64902-72-3 | Chlorsulfuron<br>[2-Chloro-N-[[4-methoxy-6-methyl-1,3,5-triazin-2-yl]amino]carbonyl]benzenesulfonamide]         | 1.0                     |            |                                                                                                                                                                 |                         |
| 64969-34-2 | 3,3'-Dichlorobenzidine sulfate                                                                                  | 0.1                     |            |                                                                                                                                                                 |                         |

\*C.I. means "Color Index"

| CAS Number  | Chemical Name                                                                                                                      | De Minimis Concentration | c. Chemical Categories                                                                                                                                                                                                                                                                                                   |
|-------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 88671-89-0  | Myclobutanil<br>[.alpha.-Butyl-.alpha.-(4-chlorophenyl)-1H-1,2,4-triazole-1-propanenitrile]                                        | 1.0                      | Section 313 requires reporting on the toxic chemical categories listed below, in addition to the specific toxic chemicals listed above.                                                                                                                                                                                  |
| 90454-18-5  | Dichloro-1,1,2-trifluoroethane                                                                                                     | 1.0                      | The metal compounds listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (i.e., antimony, nickel, etc.) as part of that chemical's structure.                                                                                                  |
| 90982-32-4  | Chlorimuron ethyl<br>[Ethyl-2-[[[(4-chloro-6-methoxyprimidin-2-yl)amino]-carbonyl]-amino]sulfonyl]benzoate]                        | 1.0                      |                                                                                                                                                                                                                                                                                                                          |
| 101200-48-0 | Tribenuron methyl<br>[2-[[[(4-Methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoic acid-, methyl ester] | 1.0                      | Toxic chemical categories are subject to the 1 percent <i>de minimis</i> concentration unless the substance involved meets the definition of an OSHA carcinogen in which case the 0.1 percent <i>de minimis</i> concentration applies. The <i>de minimis</i> concentration for each category is provided in parentheses. |
| 111512-56-2 | 1,1-Dichloro-1,2,3,3,3-pentafluoropropane (HCFC-225eb)                                                                             | 1.0                      | <b>Antimony Compounds (1.0)</b><br><i>Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.</i>                                                                                                                                                                       |
| 111984-09-9 | 3,3'-Dimethoxybenzidine hydrochloride (o-Dianisidine hydrochloride)                                                                | 0.1                      |                                                                                                                                                                                                                                                                                                                          |
| 127564-92-5 | Dichloropentafluoropropane                                                                                                         | 1.0                      | <b>Arsenic Compounds (inorganic compounds: 0.1; organic compounds: 1.0)</b><br><i>Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.</i>                                                                                                                            |
| 128903-21-9 | 2,2-Dichloro-1,1,1,3,3-pentafluoropropane (HCFC-225aa)                                                                             | 1.0                      |                                                                                                                                                                                                                                                                                                                          |
| 136013-79-1 | 1,3-Dichloro-1,1,2,3,3-pentafluoropropane (HCFC-225ea)                                                                             | 1.0                      | <b>Barium Compounds (1.0)</b><br><i>Includes any unique chemical substance that contains barium as part of that chemical's infrastructure. This category does not include: Barium sulfate CAS Number 7727-43-7</i>                                                                                                       |
|             |                                                                                                                                    |                          | <b>Beryllium Compounds (0.1)</b><br><i>Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.</i>                                                                                                                                                                     |
|             |                                                                                                                                    |                          | <b>Cadmium Compounds (0.1)</b><br><i>Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.</i>                                                                                                                                                                         |

**Chlorophenols (0.1)**

Where  $x = 1$  to  $5$

**Chromium Compounds (chromium VI compounds: 0.1; chromium III compounds: 1.0)**

*Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure.*

**Cobalt Compounds (0.1)**

*Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure.*

**Copper Compounds (1.0)**

*Includes any unique chemical substance that contains copper as part of that chemical's infrastructure.*

*This category does not include copper phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine, and/or bromine.*

**Cyanide Compounds (1.0)**

*$X^+CN^-$  where  $X = H^+$  or any other group where a formal dissociation may occur. For example  $KCN$  or  $Ca(CN)_2$ .*

**Diisocyanates (1.0)**

*This category includes only those chemicals listed below.*

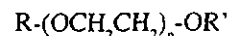
|             |                                            |
|-------------|--------------------------------------------|
| 38661-72-2  | 1,3-Bis(methylisocyanate) - cyclohexane    |
| 10347-54-3  | 1,4-Bis(methylisocyanate)- cyclohexane     |
| 2556-36-7   | 1,4-Cyclohexane diisocyanate               |
| 134190-37-7 | Diethyldiisocyanatobenzene                 |
| 4128-73-8   | 4,4'-Diisocyanatodiphenyl ether            |
| 75790-87-3  | 2,4'-Diisocyanatodiphenyl sulfide          |
| 91-93-0     | 3,3'-Dimethoxybenzidine-4,4'- diisocyanate |

|            |                                                |
|------------|------------------------------------------------|
| 91-97-4    | 3,3'-Dimethyl-4,4'-diphenylene diisocyanate    |
| 139-25-3   | 3,3'-Dimethyldiphenylmethane-4,4'-diisocyanate |
| 822-06-0   | Hexamethylene-1,6-diisocyanate                 |
| 4098-71-9  | Isophorone diisocyanate                        |
| 75790-84-0 | 4-Methyldiphenylmethane-3,4-diisocyanate       |
| 5124-30-1  | 1,1-Methylene bis(4-isocyanatocyclohexane)     |
| 101-68-8   | Methylene bis(phenylisocyanate) (MDI)          |
| 3173-72-6  | 1,5-Naphthalene diisocyanate                   |
| 123-61-5   | 1,3-Phenylene diisocyanate                     |
| 104-49-4   | 1,4-Phenylene diisocyanate                     |
| 9016-87-9  | Polymeric diphenylmethane diisocyanate         |
| 16938-22-0 | 2,2,4-Trimethylhexamethylene diisocyanate      |
| 15646-96-5 | 2,4,4-Trimethylhexamethylene diisocyanate      |

**Ethylenebisdithiocarbamic acid, salts and esters (EBDCs) (1.0)**

*Includes any unique chemical substance that contains and EBDC or an EBDC salt as part of that chemical's infrastructure.*

**Certain Glycol Ethers (1.0)**



Where  $n = 1, 2$ , or  $3$

$R$  = alkyl C7 or less; or

$R$  = phenyl or alkyl substituted phenyl;

$R'$  = H, or alkyl C7 or less; or

$OR'$  consisting of carboxylic acid ester, sulfate, phosphate, nitrate, or sulfonate.

**Lead Compounds (inorganic compounds: 0.1; organic compounds 1.0)**

*Includes any unique chemical substance that contains lead as part of that chemical's infrastructure.*

**Manganese Compounds (1.0)**

*Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure.*

**Mercury Compounds (1.0)**

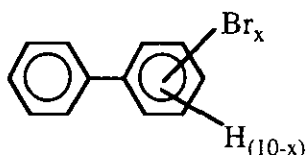
*Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure.*

**Nickel Compounds (0.1)**

*Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure.*

**Nicotine and salts (1.0)**

*Includes any unique chemical substance that contains nicotine or a nicotine salt as part of that chemical's infrastructure.*

**Nitrate compounds (water dissociable; reportable only when in aqueous solution) (1.0)****Polybrominated Biphenyls (PBBs) (0.1)**

Where  $x = 1$  to  $10$

**Polychlorinated alkanes (C10 to C13) (1.0, except for those members of the category that have an average chain length of 12 carbons and contain an average chlorine content of 60 percent by weight which are subject to the 0.1 percent *de minimis*)**

$C_xH_{2x+2-y}Cl_y$   
 where  $x = 10$  to  $13$ ;  
 $y = 3$  to  $12$ ; and  
 the average chlorine content ranges from 40 - 70% with the limiting molecular formulas  $C_{10}H_{19}Cl_3$  and  $C_{13}H_{16}Cl_{12}$

**Polycyclic aromatic compounds (PACs) (0.1 except for benzo(a)phenanthrene and dibenzo(a,e)fluoranthene which are subject to the 1.0 percent *de minimis*)**

This category includes only those chemicals listed below.

|          |                      |
|----------|----------------------|
| 56-55-3  | Benz(a)anthracene    |
| 205-99-2 | Benzo(b)fluoranthene |
| 205-82-3 | Benzo(j)fluoranthene |

|           |                                |
|-----------|--------------------------------|
| 207-08-9  | Benzo(k)fluoranthene           |
| 189-55-9  | Benzo(rst)pentaphene           |
| 218-01-9  | Benzo(a)phenanthrene           |
| 50-32-8   | Benzo(a)pyrene                 |
| 226-36-8  | Dibenz(a,h)acridine            |
| 224-42-0  | Dibenz(a,j)acridine            |
| 53-70-3   | Dibenzo(a,h)anthracene         |
| 194-59-2  | 7H-Dibenzo(c,g)carbazole       |
| 5385-75-1 | Dibenzo(a,e)fluoranthene       |
| 192-65-4  | Dibenzo(a,e)pyrene             |
| 189-64-0  | Dibenzo(a,h)pyrene             |
| 191-30-0  | Dibenzo(a,l)pyrene             |
| 57-97-6   | 7,12-Dimethylbenz(a)anthracene |
| 193-39-5  | Indeno[1,2,3-cd]pyrene         |
| 3697-24-3 | 5-Methylchrysene               |
| 5522-43-0 | 1-Nitropyrene                  |

**Selenium Compounds (1.0)**

*Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure.*

**Silver Compounds (1.0)**

*Includes any unique chemical substance that contains silver as part of that chemical's infrastructure.*

**Strychnine and salts (1.0)**

*Includes any unique chemical substance that contains strychnine or a strychnine salt as part of that chemical's infrastructure.*

**Thallium Compounds (1.0)**

*Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure.*

**Warfarin and salts (1.0)**

*Includes any unique chemical substance that contains warfarin or a warfarin salt as part of that chemical's infrastructure.*

**Zinc Compounds (1.0)**

*Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure.*

TABLE III

# TABLE III. STATE ABBREVIATIONS

|                      |    |                          |    |
|----------------------|----|--------------------------|----|
| Alabama              | AL | Montana                  | MT |
| Alaska               | AK | Nebraska                 | NE |
| American Samoa       | AS | Neveda                   | NV |
| Arizona              | AZ | New Hampshire            | NH |
| Arkansas             | AR | New Jersey               | NJ |
| California           | CA | New Mexico               | NM |
| Colorado             | CO | New York                 | NY |
| Connecticut          | CT | North Carolina           | NC |
| Delaware             | DE | North Dakota             | ND |
| District of Columbia | DC | Commonwealth of Northern |    |
| Florida              | FL | Mariana Islands          | MP |
| Georgia              | GA | Ohio                     | OH |
| Guam                 | GU | Oklahoma                 | OK |
| Hawaii               | HI | Oregon                   | OR |
| Idaho                | ID | Pennsylvania             | PA |
| Illinois             | IL | Puerto Rico              | PR |
| Indiana              | IN | Rhode Island             | RI |
| Iowa                 | IA | South Carolina           | SC |
| Kansas               | KS | South Dakota             | SD |
| Kentucky             | KY | Tennessee                | TN |
| Louisiana            | LA | Texas                    | TX |
| Maine                | ME | Utah                     | UT |
| Marshall Islands     | MH | Vermont                  | VT |
| Maryland             | MD | Virginia                 | VA |
| Massachusetts        | MA | Virgin Islands           | VI |
| Michigan             | MI | Washington               | WA |
| Minnesota            | MN | West Virginia            | WV |
| Mississippi          | MS | Wisconsin                | WI |
| Missouri             | MO | Wyoming                  | WY |

APPENDIX A

# APPENDIX A. FEDERAL FACILITY REPORTING INFORMATION

## Special Instructions for TRI Federal Facility Reporting

### Why Do Federal Facilities Need to Report?

EO 12856, Pollution Prevention and Right-to-Know Reporting, requires federal agencies to comply with the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) and the Pollution Prevention Act of 1990 (PPA). By Executive Order, federal facilities must report Toxics Release Inventory (TRI) data, pursuant to the Emergency Planning and Community Right-to-Know Act of 1986, Section 313, to EPA beginning with calendar year 1994 data. TRI submissions are due to EPA on July 1 of the year following each reporting (calendar) year.

### Identifying Federal Facility Reports

Federal facility reports are identified as federal by several indicators on the form. The facility name and parent company name are critical indicators and must be reported as described below. Another critical indicator is the federal facility report box. Federal facilities only should check this box (Form R page 2, block 4.2c) to indicate that the report is from a federal agency for a federal facility. Federal facilities should also complete the partial or complete facility blocks (Form R page 2, block 4.2a and 4.2b) as appropriate. If you are a federal facility reporting for the first time, write "new" in the TRI Facility ID (TRIFID) box, even if a contractor has reported for your facility in the past. The contractor will retain the original TRIFID. You will be assigned a new TRIFID the first time you report.

### The "Double Counting" Problem

As structured, the law and the executive order require both regulated industries and the federal government to report TRI data, sometimes for the same site. In order to prevent duplicate data in the TRI database, which could result in "double counting" data for some chemicals and locations, EPA must be able to identify and distinguish the "Government Owned Contractor Operated" (GOCO) reports submitted by the federal contractor from the federal reports which contain data for the same site. To accomplish this, federal facility reports must be accompanied by either 1) exact copies (paper or electronic) of all contractor TRI reports included in the totals reported by the federal facility, or 2) a cover letter which includes a list of the facility contractors which submit TRI reports to EPA, identifying each contractor by name, TRI technical contact, and TRI facility name and address.

## Magnetic Media Reporting

EPA encourages all federal facilities and GOCO facilities to report using either EPA's Magnetic Media reporting software, or one of the commercially available packages. If the GOCO also submits its reports on magnetic media to EPA and to the federal facility, the federal facility may submit magnetic media copies of their GOCO TRI reports to EPA. Magnetic media reports must be accompanied by a cover letter which includes:

- the required Form R certification statement;
- a list of the chemicals reported on the federal facility's disk; and
- a list, identifying the contractor(s) by name and by TRIFID number if they have an assigned TRIFID number, and the chemicals they reported (which are on the contractors' attachment disk(s))

### How to Report Your Facility Name

Facility name is a critical data element. It is used by EPA to create the TRI facility ID number, which is a unique number designed to identify a facility site. The facility name and TRIFID number are used by all TRI data users to link data from a single site across multiple reporting years. Each federal facility will be assigned a new TRIFID number when the federal report is entered into the Toxics Release Inventory system for the first time. This TRIFID number, generated when the first report is entered into the Toxics Release Inventory System, will be included in future reporting packages sent to federal facilities, and should be used by federal facilities in all future reports.

Federal facilities should report their facility name on page 1 of the Form Rs (Section 4.1), as shown in the following example:

U.S. DOE Savannah River Site

It is very important that the agency name appear first, followed by the specific plant or site name.

Federal facility GOCOs should report their names as shown in the following example:

U.S. DOE Savannah River Site - Westinghouse Operations.

## How to Report Your Standard Industrial Classification (SIC) Code

Federal facilities should report the SIC Code which most closely represents the activities taking place at the site. Additional guidance on determining your SIC code is provided in the Forms and Instructions booklet. The table on the next page contains Public Administration SIC codes 91-97 covering executive, legislative, judicial, administrative and regulatory activities of the Federal government. Government-owned and operated business establishments are classified in Major SIC groups 01-89 according to the activity in which they are engaged. For example, a Veterans Hospital would be classified in Group 806 - Hospitals.

## How to Report Your "Parent Company" Name

Federal facilities should report their parent company name on page 2 of the Form R's (Section 5.1) by reporting their complete Department or Agency name, as shown in the following example:

U.S. Department of Energy

Block 5.2, Parent Company's Dun & Bradstreet Number, should be marked NA.

GOCOs should not report a federal department or agency name as their parent company. A federal name in the parent company name field will classify the report as federal, and the GOCO may be identified as a non-reporter.

## How to Revise Your Data After It Has Been Submitted

Any TRI Form R submitter may voluntarily revise their submission if they find errors after their reports have been sent to EPA. If a federal facility receives a copy of a revision from a GOCO, the facility should revise the federal report, and submit the revised report to EPA and the appropriate state along with an exact copy of the GOCO's revision. If the revision is to a hardcopy report, the facility should photocopy the original form, use a blue or black pen to mark out the incorrect value and write in the corrected value. The revised report should be submitted to EPA, with an "X" in the revision block on page 1 of the Form R. If the revision is to a diskette, a new diskette should be submitted, containing the data only for the revised submission, not all the chemicals originally reported. The cover letter must indicate that the submission is a revision.

## National Security Data

DO NOT SUBMIT NATIONAL SECURITY DATA TO THE EPCRA REPORTING CENTER. National security data are handled through a separate process. Facilities should consult the Guidance for Implementing Executive Order 12856 documents or call the EPCRA Hotline if their Form R submission involves a national security data claim.

## Who Should Sign Federal Form R Reports?

Federal Form R reports must be signed by the senior federal employee on-site. If no federal employee is on-site, federal Form R reports must be signed by the senior federal employee with management responsibility for the site. Federal Form R reports must be signed by a federal employee. Contractor employee signatures are not considered valid on federal reports.

## More Help is Available!

Federal facilities may call EPA's EPCRA Hotline at 1-800-535-0202 to ask specific questions concerning how to submit their Form R reports.

## **Standard Industrial Classification Codes 91-97**

### **Division J- Public Administration**

#### **91 Executive, Legislative, and General Government, Except Finance**

- 9111 Executive Offices
- 9121 Legislative Bodies
- 9131 Executive and Legislative Offices Combined
- 9199 General Government, Not Elsewhere Classified

#### **92 Justice, Public Order, and Safety**

- 9211 Courts
- 9221 Police Protection
- 9222 Legal Counsel and Prosecution
- 9223 Correctional Institutions
- 9224 Fire Protection
- 9229 Public Order and Safety, Not Elsewhere Classified

#### **93 Public Finance, Taxation, and Monetary Policy**

- 9311 Public Finance, Taxation, and Monetary Policy

#### **94 Administration of Human Resource Programs**

- 9411 Administration of Educational Programs
- 9431 Administration of Public Health Programs
- 9441 Administration of Social, Human Resource and  
Income Maintenance Programs
- 9451 Administration of Veterans' Affairs, Except Health  
and Insurance

#### **95 Administration of Environmental Quality and Housing Programs**

- 9511 Air and Water Resource and Solid Waste Manage-  
ment
- 9512 Land, Mineral, Wildlife, and Forest Conservation
- 9531 Administration of Housing Programs
- 9532 Administration of Urban Planning and Commu-  
nity and Rural Development

## **96 Administration of Economic Programs**

- 9611 Administration of General Economic Programs
- 9621 Regulation and Administration of Transporta-  
tion Programs
- 9631 Regulation and Administration of Communica-  
tions, Electric, Gas, and Other Utilities
- 9641 Regulation of Agricultural Marketing and Com-  
modities
- 9651 Regulation, Licensing, and Inspection of Miscella-  
neous Commercial Sectors
- 9661 Space Research and Technology

## **97 National Security and International Affairs**

- 9711 National Security
- 9721 International Affairs

## APPENDIX B

# APPENDIX B. REPORTING CODES FOR EPA FORM R

## Part II, Section 1.1 - CAS Number

### Toxic Chemical Category Codes

|      |                                                         |
|------|---------------------------------------------------------|
| N010 | Antimony compounds                                      |
| N020 | Arsenic compounds                                       |
| N040 | Barium compounds                                        |
| N050 | Beryllium compounds                                     |
| N078 | Cadmium compounds                                       |
| N084 | Clorophenols                                            |
| N090 | Chromium compounds                                      |
| N096 | Cobalt compounds                                        |
| N100 | Copper compounds                                        |
| N106 | Cyanide compounds                                       |
| N120 | Diisocyanates                                           |
| N171 | Ethylenebisdithiocarbamic acid, salts and esters(EBDCs) |
| N230 | Glycol ethers                                           |
| N420 | Lead compounds                                          |
| N450 | Manganese compounds                                     |
| N458 | Mercury compounds                                       |
| N495 | Nickel compounds                                        |
| N503 | Nicotine and salts                                      |
| N511 | Nitrate compounds                                       |
| N575 | Polybrominated biphenyls (PBBs)                         |
| N583 | Polchlorinated alkanes                                  |
| N590 | Polycyclic aromatic compounds                           |
| N725 | Selenium compounds                                      |
| N740 | Silver compounds                                        |
| N746 | Strychnine and salts                                    |
| N760 | Thallium compounds                                      |
| N874 | Warfarin and salts                                      |
| N982 | Zinc compounds                                          |

## Part II, Section 4 - Maximum Amount of the Toxic Chemical On-Site at Any Time During the Calendar Year

### Weight Range in Pounds

| <u>Range Code</u> | <u>From...</u> | <u>To....</u>       |
|-------------------|----------------|---------------------|
| 01                | 0              | 99                  |
| 02                | 100            | 999                 |
| 03                | 1,000          | 9,999               |
| 04                | 10,000         | 99,999              |
| 05                | 100,000        | 999,999             |
| 06                | 1,000,000      | 9,999,999           |
| 07                | 10,000,000     | 49,999,999          |
| 08                | 50,000,000     | 99,999,999          |
| 09                | 100,000,000    | 499,999,999         |
| 10                | 500,000,000    | 999,999,999         |
| 11                | 1 billion      | more than 1 billion |

## Part II, Section 5 - Releases of the Toxic Chemical to the Environment On-Site and Part II, Section 6 - Transfers of the Toxic Chemical in Waste Streams to Off-Site Locations

### Total Release or Transfer

| <u>Code</u> | <u>Range (lbs)</u> |
|-------------|--------------------|
| A           | 1-10               |
| B           | 11-499             |
| C           | 500-999            |

### Basis of Estimate

- M: Estimate is based on monitoring data or measurements for the toxic chemical as transferred to an off-site facility.
- C: Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in waste streams entering and leaving process equipment.
- E: Estimate is based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emission factors).
- O: Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas or best engineering judgment.) This would include applying an estimated removal efficiency to a waste stream, even if the composition of the waste stream before treatment was fully characterized by monitoring data.

## Part II, Section 6 - Transfers of the Toxic Chemical in Waste Streams to Off-Site Locations

### Type of Waste Treatment/Disposal/Recycling/Energy Recovery

- M10 Storage Only
- M20 Solvents/Organics Recovery
- M24 Metals Recovery
- M26 Other Reuse or Recovery
- M28 Acid Regeneration
- M40 Solidification/Stabilization
- M41 Solidification/Stabilization Metals and Metal Compounds only
- M50 Incineration/Thermal Treatment
- M54 Incineration/Insignificant Fuel Value
- M56 Energy Recovery
- M61 Wastewater Treatment (Excluding POTW)
- M62 Wastewater Treatment (Excluding POTW) Metals and Metal Compounds only

M69 Other Waste Treatment  
 M71 Underground Injection  
 M72 Landfill/Disposal Surface Impoundment  
 M73 Land Treatment  
 M79 Other Land Disposal  
 M90 Other Off-Site Management  
 M92 Transfer to Waste Broker -- Energy Recovery  
 M93 Transfer to Waste Broker -- Recycling  
 M94 Transfer to Waste Broker -- Disposal  
 M95 Transfer to Waste Broker -- Waste Treatment  
 M99 Unknown

Federal Information Processing Standards (FIPS) Codes  
 for Transfers of the Toxic Chemical to Other Countries

This is an abridged list of countries to which a U.S. facility might ship a listed toxic chemical. For a complete listing of FIPS codes, consult your local library. To obtain a FIPS code for a country not listed, contact the EPCRA Hotline.

| <u>Country</u> | <u>Code</u> |
|----------------|-------------|
| Argentina      | AR          |
| Belgium        | BE          |
| Bolivia        | BL          |
| Brazil         | BR          |
| Canada         | CA          |
| Chile          | CI          |
| Columbia       | CO          |
| Costa Rica     | CS          |
| Cuba           | CU          |
| Ecuador        | EC          |
| El Salvador    | ES          |
| France         | FR          |
| Guatemala      | GT          |
| Honduras       | HO          |
| Ireland        | EI          |
| Italy          | IT          |
| Mexico         | MX          |
| Nicaragua      | NU          |
| Panama         | PM          |
| Paraguay       | PA          |
| Peru           | PE          |
| Portugal       | PO          |
| Spain          | SP          |
| Switzerland    | SZ          |
| United Kingdom | UK          |
| Uruguay        | UY          |
| Venezuela      | VE          |

**Part II, Section 7A - Waste Treatment Methods and Efficiency**

General Waste Stream

A Gaseous (gases, vapors, airborne particulates)  
 W Wastewater (aqueous waste)  
 L Liquid waste streams (non-aqueous waste)  
 S Solid waste streams (including sludges and slurries)

Waste Treatment Methods

**Air Emissions Treatment**

A01 Flare  
 A02 Condenser  
 A03 Scrubber  
 A04 Absorber  
 A05 Electrostatic Precipitator  
 A06 Mechanical Separation  
 A07 Other Air Emission Treatment

**Biological Treatment**

B11 Biological Treatment -- Aerobic  
 B21 Biological Treatment -- Anaerobic  
 B31 Biological Treatment -- Facultative  
 B99 Biological Treatment -- Other

**Chemical Treatment**

C01 Chemical Precipitation -- Lime or Sodium Hydroxide  
 C02 Chemical Precipitation -- Sulfide  
 C09 Chemical Precipitation -- Other  
 C11 Neutralization  
 C21 Chromium Reduction  
 C31 Complexed Metals Treatment (other than pH Adjustment)  
 C41 Cyanide Oxidation -- Alkaline Chlorination  
 C42 Cyanide Oxidation -- Electrochemical  
 C43 Cyanide Oxidation -- Other  
 C44 General Oxidation (including Disinfection) -- Chlorination  
 C45 General Oxidation (including Disinfection) -- Ozonation  
 C46 General Oxidation (including Disinfection) -- Other  
 C99 Other Chemical Treatment

**Incineration/Thermal Treatment**

F01 Liquid Injection  
 F11 Rotary Kiln with Liquid Injection Unit  
 F19 Other Rotary Kiln  
 F31 Two Stage

- F41 Fixed Hearth
- F42 Multiple Hearth
- F51 Fluidized Bed
- F61 Infra-Red
- F71 Fume/Vapor
- F81 Pyrolytic Destructor
- F82 Wet Air Oxidation
- F83 Thermal Drying/Dewatering
- F99 Other Incineration/Thermal Treatment

#### Physical Treatment

- P01 Equalization
- P09 Other Blending
- P11 Settling/Clarification
- P12 Filtration
- P13 Sludge Dewatering (non-thermal)
- P14 Air Flotation
- P15 Oil Skimming
- P16 Emulsion Breaking -- Thermal
- P17 Emulsion Breaking -- Chemical
- P18 Emulsion Breaking -- Other
- P19 Other Liquid Phase Separation
- P21 Adsorption -- Carbon
- P22 Adsorption -- Ion Exchange (other than for recovery/reuse)
- P23 Adsorption -- Resin
- P29 Adsorption -- Other
- P31 Reverse Osmosis (other than for recovery/reuse)
- P41 Stripping -- Air
- P42 Stripping -- Steam
- P49 Stripping -- Other
- P51 Acid Leaching (other than for recovery/reuse)
- P61 Solvent Extraction (other than recovery/reuse)
- P99 Other Physical Treatment

#### Solidification/Stabilization

- G01 Cement Processes (including Silicates)
- G09 Other Pozzolonic Processes (including Silicates)
- G11 Asphaltic Processes
- G21 Thermoplastic Techniques
- G99 Other Solidification Processes

#### Range of Influent Concentration

- 1 = Greater than 1 percent
- 2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
- 3 = 1 part per million to 100 parts per million
- 4 = 1 part per billion to 1 part per million
- 5 = Less than 1 part per billion

[Note: Parts per million (ppm) is milligrams/kilogram (mass/mass) for solids and liquids; cubic centimeters/cubic meter (volume/volume) for gases; milligrams/liter for solutions or dispersions of the chemical in water; and milligrams of chemical/kilogram of air for particulates in air. If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in milligrams/cubic meters, multiply by 0.773 to obtain parts per million. Factors are for standard conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.]

#### Part II, Section 7B - On-Site Energy Recovery Processes

- U01 Industrial Kiln
- U02 Industrial Furnace
- U03 Industrial Boiler
- U09 Other Energy Recovery Methods

#### Part II, Section 7C - On-Site Recycling Processes

- R11 Solvents/Organics Recovery -- Batch Still Distillation
- R12 Solvents/Organics Recovery -- Thin-Film Evaporation
- R13 Solvents/Organics Recovery -- Fractionation
- R14 Solvents/Organics Recovery -- Solvent Extraction
- R19 Solvents/Organics Recovery -- Other
- R21 Metals Recovery -- Electrolytic
- R22 Metals Recovery -- Ion Exchange
- R23 Metals Recovery -- Acid Leaching
- R24 Metals Recovery -- Reverse Osmosis
- R26 Metals Recovery -- Solvent Extraction
- R27 Metals Recovery -- High Temperature
- R28 Metals Recovery -- Retorting
- R29 Metals Recovery -- Secondary Smelting
- R30 Metals Recovery -- Other
- R40 Acid Regeneration
- R99 Other Reuse or Recovery

#### Part II, Section 8.10 - Source Reduction Activity Codes

##### Good Operating Practices

- W13 Improved maintenance scheduling, recordkeeping, or procedures
- W14 Changed production schedule to minimize equipment and feedstock changeovers
- W19 Other changes in operating practices

**Inventory Control**

- W21 Instituted procedures to ensure that materials do not stay in inventory beyond shelf-life
- W22 Began to test outdated material -- continue to use if still effective
- W23 Eliminated shelf-life requirements for stable materials
- W24 Instituted better labelling procedures
- W25 Instituted clearinghouse to exchange materials that would otherwise be discarded
- W29 Other changes in inventory control

**Spill and Leak Prevention**

- W31 Improved storage or stacking procedures
- W32 Improved procedures for loading, unloading, and transfer operations
- W33 Installed overflow alarms or automatic shut-off valves
- W35 Installed vapor recovery systems
- W36 Implemented inspection or monitoring program of potential spill or leak sources
- W39 Other spill and leak prevention

**Raw Material Modifications**

- W41 Increased purity of raw materials
- W42 Substituted raw materials
- W49 Other raw material modifications

**Process Modifications**

- W51 Instituted recirculation within a process
- W52 Modified equipment, layout, or piping
- W53 Use of a different process catalyst
- W54 Instituted better controls on operating bulk containers to minimize discarding of empty containers
- W55 Changed from small volume containers to bulk containers to minimize discarding of empty containers
- W58 Other process modifications

**Cleaning and Degreasing**

- W59 Modified stripping/cleaning equipment
- W60 Changed to mechanical stripping/cleaning devices (from solvents or other materials)
- W61 Changed to aqueous cleaners (from solvents or other materials)
- W63 Modified containment procedures for cleaning units
- W64 Improved draining procedures
- W65 Redesigned parts racks to reduce dragout

- W66 Modified or installed rinse systems
- W67 Improved rinse equipment design
- W68 Improved rinse equipment operation
- W71 Other cleaning and degreasing modifications

**Surface Preparation and Finishing**

- W72 Modified spray systems or equipment
- W73 Substituted coating materials used
- W74 Improved application techniques
- W75 Changed from spray to other system
- W78 Other surface preparation and finishing modifications

**Product Modifications**

- W81 Changed product specifications
- W82 Modified design or composition
- W83 Modified packaging
- W89 Other product modifications

**Part II, Section 8.10 - Methods Used to Identify Source Reduction Activities**

For each source reduction activity, enter up to three of the following codes that correspond to the method(s) used to identify that activity which contributed most to the decision to implement that activity.

- T01 Internal Pollution Prevention Opportunity Audit(s)
- T02 External Pollution Prevention Opportunity Audit(s)
- T03 Materials Balance Audits
- T04 Participative Team Management
- T05 Employee Recommendation (independent of a formal company program)
- T06 Employee Recommendation (under a formal company program)
- T07 State Government Technical Assistance Program
- T08 Federal Government Technical Assistance Program
- T09 Trade Association/Industry Technical Assistance Program
- T10 Vendor Assistance
- T11 Other

APPENDIX C

## APPENDIX C. COMMON ERRORS IN COMPLETING FORM R REPORTS

The common errors in complying with section 313 and completing Form R occur in three areas: Threshold determination errors, errors completing the Form R and release estimation errors. These errors result in omission of required toxic chemical reports, inaccurate data entered into the TRI database, prevention of report data being entered into the database, and the underestimation or overestimation of quantities of toxic chemical reported.

Some errors on the Form R do not allow the data to be processed. These type of errors are usually facility identification/location errors, chemical identification errors, missing pages, invalid Form R, magnetic disk processing errors, or more than one chemical reported per Form R. EPA will issue a Notice of Significant Error and/or a Notice of Noncompliance to facilities with these types of errors. The notice will indicate that the Form R cannot be further processed and entered into the TRI database and that changes must be submitted to EPA by a certain date or further enforcement actions may be taken.

For other types of Form R completion errors, including missing required data or erroneous data, the facility will be issued a Notice of Technical Error by EPA. This notice will explain the nature of the error and will require that corrections be returned to EPA by a certain date. These type of errors usually involve, for example, the use of invalid codes, missing required data or obvious errors such as incorrect latitude/longitude or facility identification numbers. Other errors include incomplete off-site information and not reporting Section 5 and 6 quantities in the appropriate fields in Section 8 and vice versa.

EPA may initiate an inspection to review the activities at a facility involving reportable toxic chemicals. If, as a result of the inspection, EPA determines that the facility should have submitted a Form R, then EPA may take enforcement action against the facility, which may involve the subsequent assessment of fines. Errors which result in non-reporting violations include incorrect threshold determination, misapplying exemptions, and overlooking activity involving a reportable chemical.

Facilities should also keep copies of submitted Form R reports and all documentation used to complete the report. The documentation should include calculations for threshold determinations, the basis of exemptions applied, and the estimation techniques and data used for all quantities reported on the Form R.

### Form R Completion Errors

- ❑ **Invalid chemical identification on page 2.** The CAS number and the chemical name reported on page 2 must exactly match the listed section 313 CAS number and toxic chemical name. The toxic chemical category code must exactly match the listed category code in Appendix B. A generic chemical name should only be provided if you are claiming the section 313 chemical identity as a trade secret. Toxic chemical names and CAS numbers should be taken directly from the section 313 toxic chemical list (Table II). Mixture names are to be entered in Part II, Section 2 only if the supplier is claiming the identity of the toxic chemical trade secret and that is the sole identification. Mixture names that include the name or CAS number of one or more section 313 toxic chemical(s) are not valid uses of the mixture name field.
- ❑ **Missing certification signature.** An original certification signature must appear on page 1 of every Form R submitted to EPA.
- ❑ **Incomplete forms.** A complete Form R report for any toxic chemical or toxic chemical category consists of at least five unique pages stapled together. EPA cannot enter into the database data from a package which contains only one page 1, but several page 2's, 3's, 4's, 5's, etc. These are considered incomplete submissions.
- ❑ **Maximum amount on-site left blank.** In a surprising number of Form R submissions, Part II, Section 4 on page 2 is left blank. The appropriate code is required in this field.
- ❑ **Invalid Forms.** Be sure to use the correct version of the form for the reporting year in question. You cannot use forms provided for reporting years 1987-1990 to report data for years 1991-1995. You cannot use Form Rs provided for reporting years 1987-1995 to report data for years 1996 and beyond.

❑ **"Questionable" entries, such as:**

- Missing or incorrect ZIP codes;
- Missing county names;
- Invalid SIC codes;
- Missing or invalid Dun and Bradstreet numbers;
- Incomplete off-site and POTW information (e.g., missing city name)

Incorrect entries such as these may require corrections to be made by the facility. If amounts are reported in units other than pounds (e.g., metric) or with exponential numbers, EPA may require a revision of the Form R to be submitted.

❑ **Incorrect latitude and longitude coordinates.** Latitude and longitude coordinates are important data on the Form R. These coordinates must be determined using the correct map and correct measuring techniques and reported in degrees, minutes, and seconds. For additional guidance, see Appendix E.

❑ **Incorrect completion of trade secret information.** The response to trade secret questions in Section I.2 and Section II.1.3 of a Form R must be consistent. If trade secrecy is indicated, a sanitized Form R and two trade secret substantiations (one sanitized) must be submitted in the same package as the trade secret Form R. Leave Section II.1.3 blank if no trade secret claim is being made.

❑ **Revisions not identified.** Revisions to previously submitted data may be provided to EPA by making corrections in blue and black ink on a completed copy of the Form R originally submitted; if a revision is made for reporting year 1991 or later, mark an "X" in the space marked "Enter 'X' here if this is a revision" on page 1; provide an original signature and new date, and send the completed form to the EPCRA Reporting Center. You must also send a copy of the revision to the appropriate State agency. Revisions to data submitted using magnetic media must be submitted with a newly signed cover letter.

❑ **Duplicate submissions not identified.** Facilities sometimes send multiple copies of the same Form R to insure that EPA received a copy. Duplicate submissions must be identified by printing the word "DUPLICATE" in blue or black

ink at the top of page 1. Failure to clearly identify a duplicate report may result in the duplicate appearance of the data in the TRI database.

❑ **Failure to report waste treatment in Section 7A.** Waste treatment methods used to treat waste streams containing toxic chemicals, and the efficiencies of these methods, must be reported on Form R. Information must be entered for all waste streams, even if the waste treatment does not affect the toxic chemical. If no waste treatment is performed on waste streams containing the toxic chemical, the box marked "Not Applicable" in Part II, Section 7A must be checked on the Form R. Follow the instructions for reporting waste treatment methods for more than eight treatment methods for a single waste stream.

❑ **Incorrect reporting of waste treatment methods in Section 7A.** The type of waste stream, influent concentration, and waste treatment method for each waste stream are required to be reported on Form R using specific codes, along with the waste treatment efficiency expressed as percent of removal. Invalid or missing treatment codes or missing efficiency data are common errors in Section 7A.

❑ **Reporting for delisted chemicals.** Form R reports for delisted chemicals or other non-listed chemicals are not required. EPA identifies such reports as nonreportable and notifies the facility that these reports are not required and will not be included as part of the TRI database.

❑ **Reporting discharges of mineral acids after neutralization.** When a waste stream containing a mineral acid is neutralized to a pH of 6 or above, the mineral acid is considered 100 percent neutralized for purposes of EPCRA Section 313 reporting. As a result, the release of a neutralized acid discharge should be reported on Form R as zero.

❑ **Not completing all sections of Form R.** Every section of Form R must contain data or at least one "NA".

❑ **Duplicate quantities in Part II, Sections 5 and 6.** A facility's discharge to a receiving stream should not also be reported as a transfer to a POTW and vice versa. Releases to on-site landfills should not also be reported as an off-site transfer to landfill and vice versa.

- ❑ **Documentation.** Any information used to complete the Form R must be clearly documented in facility records and be available for viewing by EPA upon request. Failure to provide proper documentation if requested by EPA may result in an enforcement action. This documentation should not be submitted with the Form R, but must be maintained by the submitting facility for three years.
- ❑ **Toxic chemical activity overlooked.** Many facilities believe that because the section 313 reporting requirement pertains to manufacturers, only the use of toxic chemicals in manufacturing processes must be examined. Any activity involving the manufacture, process, or otherwise use of a listed toxic chemical must be included in a threshold determination. For example, waste treatment operations otherwise use toxic chemicals to treat waste streams and may coincidentally manufacture another listed toxic chemical as a result of the waste treatment reaction. Other commonly overlooked activities include importation of chemicals, generation of waste byproducts, reaction intermediates, the use of chemicals for cleaning of equipment, and the combustion of coal and/or oil. Failure to correctly identify all uses of toxic chemicals at your facility may result in the omission of a required Form R.
- ❑ **Misclassification of a toxic chemical activity.** Failure to correctly classify a toxic chemical activity may result in an incorrect threshold determination. As a result, a Form R may not be submitted when one is required. "Manufacture" means to produce, prepare, compound, or import a listed toxic chemical. "Process" means the preparation of a listed toxic chemical after its manufacture, which incorporates the toxic chemical into the final product, for distribution in commerce. "Otherwise use" encompasses any use of a listed toxic chemical that does not fall under the terms "manufacture" or "process." For example, solvents in paint applied to a manufactured product are often misclassified as processed, instead of otherwise used. Because the solvents are not intentionally incorporated into the final product, the solvent is being otherwise used, not processed. Failure to submit a Form R because of an incorrect threshold determination resulting from a misclassification of a toxic chemical activity may result in an enforcement action.
- ❑ **Toxic chemical in mixtures.** When the toxic chemical being reported is a component in a mixture, report only the weight of the toxic chemical in the mixture. Refer to Section B.4.b of the instructions for calculating the weight of a toxic chemical in a mixture.
- ❑ **Incorrect interpretation of an exemption clause.** Only toxic chemicals meeting every condition of an exemption clause may be omitted from the reporting requirements. For additional guidance on the scope of the section 313 exemptions and specific examples, see the *EPCRA Section 313 Questions and Answers* document, which includes "Directive #1: Article Exemption." For example, only processing or otherwise use of an article is exempt. Incorrectly assuming that the manufacture of an article is exempt will result in incorrectly omitting toxic chemicals which are required to be included in a threshold determination.
- ❑ **Misinterpretation of the toxic chemical list.** Each individually listed toxic chemical subject to section 313 reporting requirements has a specific Chemical Abstract Service (CAS) registry number or toxic chemical category code associated with it. All information available at the facility, such as MSDSs and the *Common Synonyms for Chemicals Listed Under Section 313 of EPCRA* document, must be used to identify the listed toxic chemicals being reported.
- ❑ **Failure to consider a listed toxic chemical qualifier.** Aluminum, vanadium, and zinc are qualified as "fume or dust." Isopropyl alcohol and saccharin have manufacturing qualifiers. Phosphorus is qualified as yellow or white. Asbestos is qualified as friable. Aluminum oxide is qualified as fibrous forms. Sulfuric Acid and hydrochloric acid are qualified as aerosol. Only toxic chemicals in the form specified in the qualifier require reporting under section 313 and should be reported on Form R with the appropriate qualifier in parentheses. For example, isopropyl alcohol is listed on the toxic chemical list with the qualifier "manufacturing-strong acid process, no supplier notification." The only facilities that should be reporting this toxic chemical are those that manufacture isopropyl alcohol by the strong acid process. If it is manufactured by another process, or simply processed or otherwise used, you are not required to report it.

- ❑ **Incorrectly interpreting threshold definition.** Thresholds for section 313 are based on the amount of toxic chemicals manufactured, processed, or otherwise used at the facility over the course of a calendar year. The thresholds are not based on the amount stored on-site at any one time or the amount released to the environment.
  - ❑ **Reporting zero air emissions of a VOC.** Volatile organic chemicals (VOCs) are substances which readily evaporate at room temperature. As a result, when using these toxic chemicals in an open tank, a painting or degreasing operation, or similar open operations, air emissions will occur. Only in special cases with completely closed systems may no emission to air occur.
  - ❑ **Reporting Chemical Category Codes in Section 1.1.** Beginning with the 1991 reporting year, EPA has assigned alphanumeric category codes to the chemical categories for the purposes of reporting in Section 1.1, the CAS number field. If you are completing a Form R for a chemical category, you must provide the appropriate code for that category in Section 1.1. The category codes can be found in the instructions for Section 1.1; Table II, "Section 313 Toxic Chemical List;" and Appendix B, "Reporting Codes for EPA Form R."
  - ❑ **Reporting transfers to POTWs.** When wastewater containing a listed mineral acid is neutralized to a pH of 6 or greater before being transferred to a POTW, the transfer estimate should be reported as zero. It is incorrect to enter "NA" (Not Applicable), in such a situation.
  - ❑ **Reporting other off-site transfers.** Beginning with the 1991 reporting year, transfers off-site for the purposes of recycling or combustion for energy recovery are to be reported in Section 6.2. Any quantities reported in Sections 8.5, 8.3, 8.7, and 8.1 as sent off-site for recycling, energy recovery, treatment, or disposal, respectively, must also be reported in Section 6.2 along with the receiving location and appropriate off-site waste management code.
  - ❑ **Reporting on-site energy recovery methods in Section 7B.** When a quantity is reported in Section 8.2 as combusted for energy recovery on-site, the type of energy recovery system used must be reported in Section 7B, and vice versa.
  - ❑ **Reporting on-site recycling methods in Section 7C.** When a quantity is reported in Section 8.4 as recycled on-site, the type of recycling method must be reported in Section 7C, and vice versa.
  - ❑ **Reporting quantities in Section 8.** This section is mandatory; do not leave any box in Section 8 entirely blank. If your facility does not generate any waste or does not engage in source reduction or recycling activities enter zero or "NA" as appropriate. It is incorrect to use range codes to report quantities in Section 8. Range codes can be used only in Sections 5 and 6 of Form R. It is incorrect to use the codes used in Section 4 (for reporting the maximum amount of the reported toxic chemical on-site) to report quantities in Section 8.
- Columns C and D, the future year projections for questions 8.1 through 8.7, must be completed. EPA expects a reasonable estimate for the future year projections. Not applicable, "NA" can be used in columns A, B, C, and D to indicate that the reported toxic chemical will not undergo a specific activity such as treatment.
- ❑ **Quantities reported in Sections 8.1 through 8.7 must be mutually exclusive and additive.** This means that quantities of the reported toxic chemical should not be double-counted in Sections 8.1 through 8.7. Some facilities submitting Form Rs have reported the same quantity of a toxic chemical as both treated and recycled on-site. Some double-counting errors have been due to confusion over the differences in how on-site treatment of a toxic chemical is reported in Section 7A as compared to Section 8.6. In Section 7A, information on the treatment of waste streams containing the toxic chemical is reported, along with the percent efficiency in terms of destruction or removal of the toxic chemical from each waste stream. In Section 8.6, only the quantity of the toxic chemical actually destroyed by the treatment processes reported in Section 7A is reported to avoid double-counting within Sections 8.1 through 8.7.
- For example, a facility submits a Form R for nickel compounds. The facility treats wastewater containing the nickel compounds and removes the nickel with a 99 percent efficiency. The facility then further reclaims the nickel and

makes it available for further use in its manufacturing processes. In completing Form R, the facility should report the treatment of the wastewater with a 99 percent efficiency for the removal of the nickel in Section 7A, the method of recovery for the nickel in Section 7C, and only the amount of nickel made available for further use after reclamation as a quantity recycled on-site in Section 8.4. Any quantities released on-site or disposed off-site, including releases from either treatment or recycling activities, should be reported in Section 8.1. The facility should not report the quantity of nickel removed from the wastewaters as a quantity treated on-site in Section 8.6 because reporting the same quantity as both treated and recycled on-site incorrectly reports the nickel as destroyed and overestimates the amount of total nickel managed in waste.

- ❑ **Quantities reported in Sections 8.1 through 8.7 must not be reported in Section 8.8 and vice versa.** Amounts in Section 8.1-8.7 are associated with normal or routine generations while the amount in Section 8.8 is not.

For example, 10,000 pounds of a toxic chemical is spilled due to a catastrophic storage tank rupture during the reporting year. Of the total 10,000 pounds, 2,500 pounds volatilized and were released directly to the air and the remaining 7,500 pounds were collected and sent off-site for treatment. The total 10,000 pounds would be reported in Section 8.8. The 2,500 pound release to air would be reported in Section 5.1 as a fugitive emission, but it would not be reported in Section 8.1. The 7,500 pound transferred off-site for treatment would be reported in Section 6.2, but it would not be reported in Section 8.7.

- ❑ **Reporting toxic chemicals in RCRA wastes.** Any time a toxic chemical is contained in a waste that is identified under RCRA, the waste is associated with routine production-related activities, and that chemical is recycled, combusted for energy recovery, treated, or disposed either on or off-site, then that quantity of the toxic chemical must be included in the quantities reported in Sections 8.1 through 8.7.
- ❑ **Reporting quantities in Section 8.1, "Quantity released."** Quantities of the toxic chemical that are released on-site and reported in Section 5 of

the form should also be included in Section 8.1. Also, quantities of the toxic chemical transferred off-site for the purposes of disposal and reported in Section 6.2 should also be included in Section 8.1.

A facility must include in Section 8.1 the following quantities of the toxic chemical that are released on-site, or sent off-site for disposal that are not associated with a catastrophic or non-production related activity.

Quantities released directly to the environment and disposed on-site

Fugitive or non-point air emissions (Section 5.1)  
 Stack or point air emissions (Section 5.2)  
 Discharges to receiving streams or water bodies (Section 5.3)  
 Underground injections on-site to Class I Wells (Section 5.4.1)  
 Underground injections on-site to Class II-V Wells (Section 5.4.2)  
 Release to land on-site (Section 5.5)  
 RCRA Subtitle C landfills (Section 5.5.1A)  
 Other landfills (Section 5.5.1B)  
 land treatment/application farming (Section 5.5.2)  
 surface impoundment (Section 5.5.3)  
 other disposal (Section 5.5.4)  
 Include in these quantities any releases from any on-site treatment, recycling, or energy recovery activities.

Quantities disposed off-site

These are quantities that are reported in Section 6.2 and associated with the following codes:

M10 Storage Only;  
 M41 Solidification/Stabilization Metals and Metal Compounds only  
 M62 Wastewater Treatment (Excluding POTW)-Metals and Metal Compounds only  
 M71 Underground Injection;  
 M72 Landfill/Disposal Surface Impoundment;  
 M73 Land Treatment;  
 M79 Other Land Disposal  
 M90 Other Off-Site Management;  
 M94 Transfer to Waste Broker--Disposal; and  
 M99 Unknown.

❑ **Do not include in Section 8.1 any of the following quantities:**

- Releases to the environment on-site from remedial actions, catastrophic events, or one-time events not associated with production processes (these quantities are reported in Section 8.8 only).
- Quantities transferred off-site for disposal from remedial actions, catastrophic events, or one-time events not associated with production processes (these quantities are reported in Section 8.8 only).

❑ **Reporting quantities in Section 8.2, "Quantity used for energy recovery on-site."** A quantity must be reported in Section 8.2 for the current (reporting) year when a method of on-site energy recovery is reported in Section 7B, and vice versa. An error facilities make when completing Form R is to report the methods of energy recovery used on-site in Section 7B but not report any quantity associated with those methods. Another error is to report a quantity in Section 8.2 if the combustion of the toxic chemical took place in a system that did not recover energy (e.g., an incinerator). It is also incorrect to report a quantity of the toxic chemical as combusted for energy recovery if the toxic chemical does not have a BTU (British Thermal Unit) value high enough to sustain combustion. Examples of toxic chemicals that do not have heating values high enough to sustain combustion include metals, CFCs, and halons.

Do not include in Section 8.2 any quantities of the toxic chemical associated with non-production related activities, such as catastrophic releases and remedial actions, or other one-time events not associated with routine production practices, that were combusted for energy recovery on-site.

❑ **Reporting quantities in Section 8.3, "Quantity used for energy recovery off-site."** As in Section 8.2, it is an error to report a quantity in this section if the off-site combustion of the toxic chemical took place in a system that did not recover energy (e.g., an incinerator). It is also incorrect to report a quantity of the toxic chemical as sent off-site for the purposes of energy recovery if the toxic chemical does not have a BTU (British Thermal Unit) value high enough to sustain combustion. Examples of toxic chemicals that do not have heating values high enough to sustain combustion

include metals, CFCs, and halons. It is an error to not include quantities in Section 8.3 that are reported in Section 6.2 as transferred off-site for the purposes of combustion for energy recovery using the following codes:

M56 Energy Recovery; and  
M92 Transfer to Waste Broker-Energy Recovery.

Do not include in Section 8.3 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, or other one-time events not associated with routine production practices, that were sent off-site for the purposes of combustion for energy recovery (these quantities are reported in Section 8.8 only).

❑ **Reporting quantities in Section 8.4, "Quantity recycled on-site."** A quantity must be reported in Section 8.4 for the current (reporting) year when a method of on-site recycling is reported in Section 7C, and vice versa. An error facilities make when completing Form R is to report the methods of recycling used on-site in Section 7C but not report any quantity recovered using those methods. In addition, only the amount of the chemical that was actually recovered is to be reported in Section 8.4.

Do not include in Section 8.4 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, or other one-time events not associated with routine production practices, that were recycled on-site.

❑ **Reporting quantities in Section 8.5, "Quantity recycled off-site."** It is an error to not include quantities in Section 8.5 that are reported in Section 6.2 as transferred off-site for the purposes of recycling using the following codes:

M20 Solvents/Organics recovery;  
M24 Metals recovery;  
M26 Other reuse or recovery;  
M28 Acid regeneration; and  
M93 Transfer to Waste Broker--Recycling.

Do not report in Section 8.5 the quantity actually recycled at the off-site facility -- facilities should report the quantity that was sent off-site for the purposes of recycling. Do not include in Section 8.5 any quantities of the toxic chemical associated

with non-production related activities such as catastrophic releases and remedial actions, or other one-time events not associated with routine production practices, that were sent off-site for the purposes of recycling (these quantities are reported in Section 8.8 only).

- **Reporting quantities in Section 8.6, "Quantity treated on-site."** Quantities may not always have to be reported in Section 8.6 when Section 7A is completed. This is because the information reported in Sections 7A and 8.6 is different. Only the quantity of the toxic chemical actually destroyed during on-site treatment is reported in Section 8.6. Section 7A contains treatment data for physical removal and/or destruction of the toxic chemical as well as information on treatment methods used on the wastestream containing the toxic chemical regardless of its effect on the toxic chemical. If a quantity is reported in Section 8.6, Section 7A must be completed. For example, a facility may treat wastewaters containing a toxic chemical by physically removing the toxic chemical and then disposing of it on-site. The treatment of the wastewaters would be reported in Section 7A, with an efficiency estimate based on the amount of the toxic chemical removed from the wastewaters. The quantity of the toxic chemical removed would be reported as disposed in Section 8.1, not as treated in Section 8.6. If some of the toxic chemical is destroyed during treatment, the facility would report only the amount of the toxic chemical actually destroyed during treatment in Section 8.6 and the amount ultimately disposed in Section 8.1 in order to avoid double-counting the same quantity in Section 8.

Do not include in Section 8.6 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, or other one-time events not associated with routine production practices, that were treated on-site.

- **Reporting quantities in Section 8.7, "Quantity treated off-site."** It is an error to not include quantities in Section 8.7 that are reported in Section 6.2 as transferred off-site for the purposes of treatment and using the following codes:

M50 Incineration/Thermal treatment;  
M54 Incineration/Insignificant Fuel Value;  
M61 Wastewater treatment (excluding POTW);  
M69 Other waste treatment; and

M95 Transfer to Waste Broker-Waste Treatment. In addition to those quantities, facilities should include any quantity that is transferred to a POTW (as reported in Section 6.1) in Section 8.7, except for metals and metal compounds.

Do not include in Section 8.7 any quantities of the toxic chemical associated with non-production related activities such as catastrophic releases and remedial actions, or other one-time events not associated with routine production practices, that were sent off-site for the purposes of treatment or discharged to a POTW (these quantities are reported in Section 8.8 only).

- **Reporting quantities in Section 8.8, "Quantity released to the environment as a result of remedial actions, catastrophic events, or one-time events not associated with production processes."** Report in Section 8.8 those quantities associated with non-production related activities such as catastrophic releases and remedial actions, as well as other one-time events not associated with routine production practices, that were released to the environment on-site, or transferred off-site for the purposes of recycling, energy recovery, treatment or disposal. Quantities included in Section 8.8 must not be also reported in Sections 8.1 through 8.7.

- **Reporting the production ratio in Section 8.9.** A production ratio or activity index represents the current year's production compared with that of the previous year. The comparison (current RY/previous RY) must be provided in Section 8.9. Zeros, and negative numbers are not acceptable, "NA" (Not Applicable), should be used only when the reported toxic chemical was not manufactured, processed, or otherwise used in the year prior to the reporting year.

- **Reporting source reduction activities in Section 8.10.** It is an error to report a source reduction activity in Section 8.10 without reporting at least one method used to identify that activity and vice versa.

- **Assuming threshold exceeded or not exceeded.** Facilities should consider all Section 313 Chemicals used in very large or very small quantities and calculate the annual usage of toxic chemicals for threshold determinations.

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- ❑ **Overlooking toxic chemicals in mixtures.** Facilities should carefully review the most recent MSDS for every mixture brought on site to identify all section 313 chemicals used during a reporting year.
  - ❑ **Overlooking container residue.** "RCRA Empty" drum is NOT considered empty for TRI reporting. "RCRA Empty" drum is expected to contain residual liquid possibly up to three inches. Facilities should consider all Section 313 chemicals in residual liquid, include the quantities of toxic chemicals in threshold calculations, and report them as release if facilities meet reporting requirements for the toxic chemicals. Facilities should also include any on-site drum rinsing and disposal of rinsate in threshold and release calculations.

## APPENDIX D

## APPENDIX D. SUPPLIER NOTIFICATION REQUIREMENTS

Because manufacturers reporting under section 313 must know the toxic chemical composition of the products they use to be able to accurately calculate releases, EPA requires some suppliers of mixtures or trade name products containing one or more of the listed section 313 toxic chemicals to notify their customers. This requirement has been in effect since January 1, 1989.

This appendix explains which suppliers must notify their customers, who must be notified, what form the notice must take, and when it must be sent.

### Who Must Supply Notification

You are covered by the section 313 supplier notification requirements if you own or operate a facility which meets all of the following criteria:

- (1) Your facility is in Standard Industrial Classification (SIC) codes 20-39 (see Table I);
- (2) You manufacture, import, or process a listed toxic chemical; and
- (3) You sell or otherwise distribute a mixture or trade name product containing the toxic chemical to either:
  - A facility in SIC Codes 20-39.
  - A facility that then sells the same mixture or trade name product to a firm in SIC codes 20-39.

**Note that you may be covered by the supplier notification rules even if you are not covered by the section 313 release reporting requirements.** For example, even if you have fewer than 10 full-time employees or do not manufacture or process any of the toxic chemicals in sufficient quantities to trigger the release reporting requirements, you may still be required to notify certain customers.

### Who Must Be Notified

For each mixture or trade name product that contains a listed toxic chemical, you will have to notify all customers in SIC codes 20-39 or distributors who in turn sell that product to facilities in SIC codes 20-39. Unless you know otherwise, you should assume that the chain of distribution includes facilities in SIC codes 20-39. (The notification

is limited to SIC codes 20-39 facilities and their suppliers because only facilities in those SIC codes may be required to report releases under section 313.)

An example would be if you sold a lacquer containing toluene to distributors who then sell the product to other manufacturers. The distributors are not in SIC codes 20-39, but because they sell the product to companies in SIC codes 20-39, they must be notified so that they may pass the notice along to their customers, as required.

The language of the supplier notification requirements covers mixtures or trade name products that are sold or otherwise distributed. The "otherwise distributed" language applies to intra-company transfers. However, if the company has developed an internal communications procedure that alerts their other facilities to the presence and content of covered toxic chemicals in their products, then EPA would accept this.

Note that beginning with the first shipments in 1998, facilities in SIC codes 20-39 will be required to also notify facilities in the newly added industry groups.

### Supplier Notification Must Include the Following Information:

- (1) A statement that the mixture or trade name product contains a toxic chemical or chemicals subject to the reporting requirements of EPCRA section 313 (40 CFR 372);
- (2) The name of each toxic chemical and the associated Chemical Abstracts Service (CAS) registry number of each chemical if applicable. (CAS numbers are not used for chemical categories, since they can represent several individual toxic chemicals.)
- (3) The percentage, by weight, of each toxic chemical (or all toxic chemicals within a listed category) contained in the mixture or trade name product.

For example, if a mixture contains a chemical (i.e., 12 percent zinc oxide) that is a member of a reportable toxic chemical category (i.e., zinc compounds), the notification must indicate that the mixture contains a zinc compound at 12 percent by weight. Supplying only the weight percent of the parent metal (zinc) does not fulfill the requirement. The customer must be told the weight percent of the entire compound within a listed toxic chemical category present in the mixture.

## How the Notification Must Be Made

The required notification must be provided at least annually in writing. Acceptable forms of notice include letters, product labeling, and product literature distributed to customers. If you are required to prepare and distribute a Material Safety Data Sheet (MSDS) for the mixture under the Occupational Safety and Health Act (OSHA) Hazard Communication Standard, your section 313 notification must be attached to the MSDS or the MSDS must be modified to include the required information. (A sample letter and recommended text for inclusion in an MSDS appear at the end of this appendix.)

You must make it clear to your customers that any copies or redistribution of the MSDS or other form of notification must include the section 313 notice. In other words, your customers should understand their requirement to include the section 313 notification if they give your MSDS to their customers.

## When Notification Must Be Provided

In general, you must notify each customer receiving a mixture or trade name product containing a listed toxic chemical with the first shipment of each calendar year. You may send the notice with subsequent shipments as well, but it is required that you send it with the first shipment each year. Once customers have been provided with an MSDS containing the section 313 information, you may refer to the MSDS by a written letter in subsequent years (as long as the MSDS is current).

If EPA adds toxic chemicals to the section 313 list, and your products contain the newly listed toxic chemicals, notify your customers with the first shipment made during the next calendar year following EPA's final decision to add the chemical to the list. For example, if EPA adds chemical ABC to the list in September 1997, supplier notification for chemical ABC would have begun with the first shipment in 1998.

You must send a new or revised notice to your customers if you:

- (1) Change a mixture or trade name product by adding, removing, or changing the percentage by weight of a listed toxic chemical.
- (2) Discover that your previous notification did not properly identify the toxic chemicals in the mixture or correctly indicate the percentage by weight.

In these cases, you must:

- (1) Supply a new or revised notification within 30 days of a change in the product or the discovery of misidentified toxic chemical(s) in the mixture or incorrect percentages by weight; and
- (2) Identify in the notification the prior shipments of the mixture or product in that calendar year to which the new notification applies (e.g., if the revised notification is made on August 12, indicate which shipments were affected during the period January 1 - August 12).

## When Notifications Are Not Required

Supplier notification is not required for a "pure" toxic chemical unless a trade name is used. The identity of the toxic chemical will be known based on label information.

You are not required to make a "negative declaration." That is, you are not required to indicate that a product contains no section 313 toxic chemicals.

If your mixture or trade name product contains one of the listed toxic chemicals, you are not required to notify your customers if:

- (1) Your mixture or trade name product contains the toxic chemical in percentages by weight of less than the following levels (These are known as *de minimis* levels):

- 0.1 percent if the toxic chemical is defined as an "OSHA carcinogen";
- 1 percent for other toxic chemicals.

*De minimis* levels for each toxic chemical and chemical category are listed Table II.

- (2) Your mixture or trade name product is one of the following:

- An article that does not release a listed toxic chemical under normal conditions of processing or otherwise use.
- Foods, drugs, cosmetics, pesticides, alcoholic beverages, tobacco, or tobacco products packaged for distribution to the general public.

- Any consumer product, as the term is defined in the Consumer Product Safety Act, packaged for distribution to the general public. For example, if you mix or package one-gallon cans of paint designed for use by the general public, notification is not required.

- (3) Your mixture or trade name product is contained in a waste stream being sent off-site for waste treatment or disposal.

### Trade Secrets

Chemical suppliers may consider the chemical name or the specific concentration of a section 313 toxic chemical in a mixture or trade name product to be a trade secret. If you consider the:

- (1) Specific identity of a toxic chemical to be a trade secret, the notice must contain a generic chemical name that is descriptive of the structure of that toxic chemical. For example, decabromodiphenyl oxide could be described as a halogenated aromatic.
- (2) Specific percentage by weight of a toxic chemical in the mixture or trade name product to be a trade secret, your notice must contain a statement that the toxic chemical is present at a concentration that does not exceed a specified upper bound. For example, if a mixture contains 12 percent toluene and you consider the percentage a trade secret, the notification may state that the mixture contains toluene at no more than 15 percent by weight. The upper bound value chosen must be no larger than necessary to adequately protect the trade secret.

If you claim this information to be trade secret, you must have documentation that provides the basis for your claim.

### Recordkeeping Requirements

You are required to keep records for three years of the following:

- (1) Notifications sent to recipients of your mixture or trade name product;
- (2) Explanations of why a notification was considered necessary and all supporting materials used to develop the notice;
- (3) If claiming a specific toxic chemical identity a trade secret, why the toxic chemical identity is considered a trade secret and the appropriateness of the generic chemical name provided in the notification; and
- (4) If claiming a specific concentration a trade secret, explanations of why a specific concentration is considered a trade secret and the basis for the upper bound concentration limit.

This information must be readily available for inspection by EPA.

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## Sample Notification Letter

January 2, 1998

Mr. Edward Burke  
Furniture Company of North Carolina  
1000 Main Street  
Anytown, North Carolina 99999

Dear Mr. Burke:

The purpose of this letter is to inform you that a product that we sell to you, Furniture Lacquer KXZ-1390, contains 20 percent toluene (Chemical Abstracts Service (CAS) number 108-88-3) and 15 percent zinc compounds. We are required to notify you of the presence of toluene and zinc compounds in the product under section 313 of the Emergency Planning and Community Right-to-Know Act of 1986. This law requires certain manufacturers to report on annual emissions of specified toxic chemicals and chemical categories.

If you are unsure whether or not you are subject to the reporting requirements of Section 313, or need more information, call EPA's Emergency Planning and Community Right-To-Know Information Hotline at (800) 535-0202. Your other suppliers should also be notifying you if section 313 toxic chemicals are in the mixtures and trade name products they sell to you.

Please also note that if you repackage or otherwise redistribute this product to industrial customers, a notice similar to this one should be sent to those customers.

Sincerely,

Emma Sinclair  
Sales Manager

## Furniture Products

**Sample Notification on an MSDS**

## Section 313 Supplier Notification

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372):

| <u>CAS #</u> | <u>Chemical Name</u> | <u>Percent by Weight</u> |
|--------------|----------------------|--------------------------|
| 108-88-3     | Toluene              | 20%                      |
| NA           | Zinc Compounds       | 15%                      |

This information should be included in all MSDSs that are copied and distributed for this material.

Material Safety Data Sheet



APPENDIX E

## APPENDIX E. HOW TO DETERMINE LATITUDE AND LONGITUDE FROM TOPOGRAPHIC MAPS

Latitude and longitude coordinates of reporting facilities are very important for pinpointing facility location and are a required data element on Form R. As such, EPA is encouraging facilities to make the best possible measurements when determining latitude and longitude. As with any other data element, missing, suspect, or incorrect data may result in EPA issuing a Notice of Technical Error to the facility.

Latitude is the distance north or south of the equator. Longitude is the distance east or west of the prime meridian (Greenwich, England). Latitude and longitude are measured in degrees, minutes, and seconds.

60" (seconds) = 1' (minute)

60' (minutes) = 1° (degree)

The most important tool available for determining latitude and longitude for your facility is the U.S. Geological Survey (USGS) topographic quadrangle map. These maps are published in varying degrees of detail. The most detailed version of the topographic quadrangle map is in 7.5 x 7.5 minute increments with a scale of 1:24000 (i.e., one inch on the map represents 2,000 feet). Detailed topographic quadrangle maps are also available in 7.5 x 15 minute increments with a scale of 1:25000 (i.e., one inch on the map represents approximately four miles). It is very important that latitude and longitude measurements be made from one of the detailed maps described above. Otherwise, measurements will not accurately reflect the location of your facility and could be identified as an error on your Form R submission.

In order to identify the detailed topographic quadrangle map in which your facility is located, the USGS has published an index and a catalog of topographic maps available for each state. Both the index and the catalog are available in many libraries or free of charge from the Distribution Branch of the USGS (address on following page). The *Index to Topographic and Other Map Coverage* helps you to identify the most detailed map in which your facility is located. To identify the most detailed map, follow these simple steps on how to use the index:

- (1) The beginning of each index contains a map of the state, broken into numbered quadrangular sections. The numbered quadrangular sections are called general areas of interest. **Identify** the numbered section in which your facility is located.

- (2) The subsequent pages of the index contain detailed maps of each general area of interest, in numerical order. **Identify** the detailed map corresponding to the numbered general area of interest identified in Step 1.
- (3) Within this detailed map, **identify** the smaller quadrangular area in which your facility is located. This smaller quadrangular section is the specific area of interest. Record first the letter then the number coordinate for your specific area of interest (e.g., E4).
- (4) Using the chart found on the same page as the detailed map of the general area of interest, **record** the name of the specific area of interest in which your facility is located, identified by the letter and number coordinates (e.g., Richmond).

The name of the specific area of interest and its corresponding letter and number coordinates identify the most detailed topographic quadrangle map in which your facility is located. To identify the map reference code and file number necessary to order this map, follow these simple steps for using the *Catalog of Topographic and Other Published Maps* for the state in which your facility is located:

- (5) The beginning of the catalog explains the meaning of the reference code. On the pages following this explanation, there are charts listed alphabetically by the name of the specific area of interest with corresponding file numbers and map reference codes. Using the name of the specific area of interest recorded in Step 4, **identify** the file number and map reference code from the chart for the map in which your facility is located (e.g., file number 00692, map reference code 37977-E4-TF-024-00).
- (6) Use the file number and map reference code to obtain the specific topographic quadrangle map in which your facility is located.

These detailed topographic quadrangle maps are available in many libraries or for purchase from the Distribution Branch of the USGS and from private map dealers. The *Catalog of Topographic and Other Published Maps* contains a list of map depository libraries and topographic map dealers for each state covered in the catalog.

To purchase a topographic quadrangle map from the USGS, you must send a written request to the Distribution Branch of the USGS, containing the file number, map reference code, the name of the city, state and zip code in which your facility is located, payment of \$4.00 per map sheet and a handling charge of \$3.50 for each order mailed.

The Distribution Branch of the USGS can be reached at:

**Distribution Branch of the USGS**  
**P.O. Box 25286**  
**Denver Federal Center**  
**Denver, CO 80225**  
**(303) 202-4700**

#### ALLOW 5 WEEKS FOR DELIVERY

In addition, you may purchase a topographic quadrangle map from the USGS through a USGS Public Inquiry Office. The Public Inquiry Offices are listed for each state on the inside back cover of the *Catalog of Topographic and Other Published Maps*.

If you need help in determining your latitude and longitude, once you have the necessary map, the **National Cartographic Information Center** can provide assistance:

**Western states: (303) 202-4200**  
**Eastern states: (314) 341-0851**

Please call in advance of the section 313 reporting deadline to avoid unnecessary delays.

### Determining Your Facility's Latitude and Longitude

(See diagram next page.)

Once you have obtained the correct map for your facility:

- (1) Mark the location of your facility on the map with a point. If your facility is large, choose a point central to the production activities of the facility. If certain structures in your facility are represented on the map, mark one of the structures with a point.
- (2) Construct a small rectangle around the point with fine pencil lines connecting the nearest 2 1/2' or 5' graticules. Graticules are intersections of latitude and longitude lines that are marked on the map edge, and appear as black crosses at four points in the interior of the map.

- (3) Read and record the latitude and longitude (in degrees, minutes, and seconds) for the southeast corner of the small quadrangle drawn in step two. The latitude and longitude are printed at the edges of the map.

- (4) To determine the increment of latitude above the latitude line recorded in step 3,

- position the map so that you face **west**;
- place the ruler in approximately a north-south alignment, with the "0" on the latitude line recorded in step 3 with the ruler edge intersecting the point.

Without moving the ruler, read and record:

- the measurement from the latitude line to the desired point (the point distance);
- the measurement from the latitude line to the north line of the small quadrangle (the total distance).

Determine the number of seconds to be added to the latitude recorded in step 3 by using the ratio:

$$\frac{\text{Point distance}}{\text{Total distance}} \times 150'' = \text{increment of latitude between lines}$$

[Note: 150" is the number of seconds of arc for the side of the small quadrangle on a 7.5' map. If you are using a 15' map, the multiplication factor is 300" instead of 150" since each graticule is 5' of latitude or longitude.]

For example:

$$\begin{array}{rcl} \text{Point distance} & = & 99.5 \\ \text{Total distance} & = & 192.0 \\ \hline \frac{99.5}{192.0} \times 150'' & = & 77.7'' \\ & = & 01'17.7'' \end{array}$$

$$(60'' = 1'; 77.7'' = 60'' + 17.7'' = 01' 17.7'')$$

$$\begin{array}{rcl} \text{Latitude in step 3} & & 32^{\circ}17'30'' \\ \text{Increment} & & + 01'17.7'' \\ \hline \text{Latitude of point} & & 32^{\circ}18'47.7'' \end{array}$$

$$\text{to the nearest second} = 32^{\circ}18'48''$$

- (5) To determine the increment of longitude west of the longitude line recorded in step 3,

- position the map so that you face **south**;
- place the ruler in approximately an east-west alignment with the "0" on the longitude line recorded in step 3 with the ruler edge intersecting the point.

$\frac{\text{Point distance}}{\text{total distance between lines}} \times 150'' = \text{increment of longitude}$

For example:

Point distance = 65.0  
Total distance = 149.9

$$\frac{65.0}{149.9} \times 150'' = 65'' = 01'05''$$

$$(60'' = 1'; 65'' = 60'' + 05'' = 01'05'')$$

|                     |                  |
|---------------------|------------------|
| Longitude in step 3 | 78°05'00"        |
| Increment           | + 01'05"         |
| Longitude of point  | <u>78°06'05"</u> |

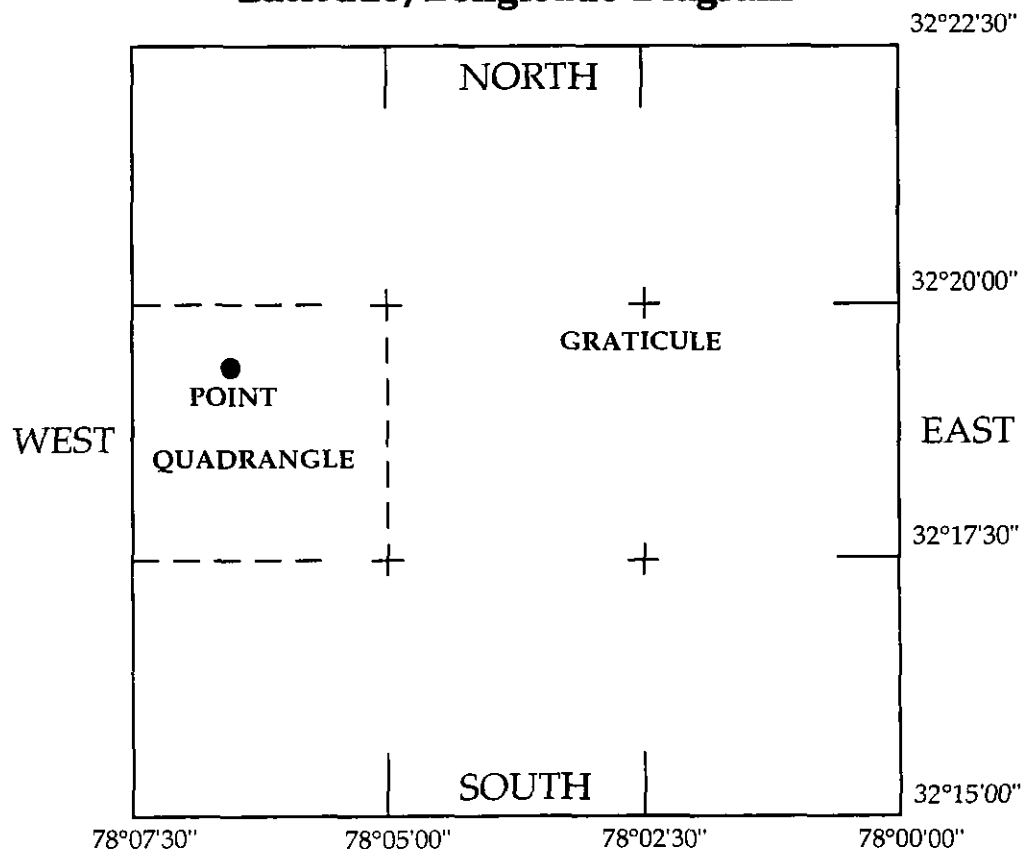
to the nearest second = 78°06'05"

Without moving the ruler, read and record:

- the measurement from the longitude line to the desired point (the point distance);
- the measurement from the longitude line to the west line of the small quadrangle (the total distance).

Determine the number of seconds to be added to the longitude recorded in step 3 by using the ratio:

### Latitude/Longitude Diagram



Point: Latitude 32°18'48" North, Longitude 78°06'05" West

Note: This diagram is based on a USGS 7.5 Minute Series Topographic Map. It is not drawn to scale.

APPENDIX F

# APPENDIX F. STATE DESIGNATED SECTION 313 CONTACTS

**Note:** Use the appropriate address for submission of Form R reports to your State. In addition, many States have additional state reporting requirements. Check with your State contact on any State requirements.

Submitting Electronically to States. As of the publication of this book the following states confirmed that they accept electronic submission.

|    |    |    |    |
|----|----|----|----|
| AK | ID | NC | SC |
| AZ | IL | ND | SD |
| CA | IN | NJ | UT |
| CO | KS | NM | VA |
| DC | LA | NY | VT |
| DE | MD | NV | WA |
| FL | MI | OH | WI |
| GA | MN | OK | WV |
| HI | MO | OR |    |
| IA | MT | PA |    |

If your state is not listed here. Please contact your state office to confirm that paper submissions are required.

## Alabama

Mr. Edward Poolos  
Alabama Emergency Response Commission  
Alabama Department of Environmental Management  
1751 Congressman W.L. Dickinson Drive  
Montgomery, AL 36109  
(334) 260-2717  
eft@adma.state.al.us

## Alaska

Ms. Camille Stephens  
Department of Environmental Conservation  
Division of Spill Prevention Response  
410 Willoughby Avenue, Suite 105  
Juneau, AK 99801-1795  
(907) 465-5242

## American Samoa

Pati Faiai  
American Samoa EPA  
American Samoa Government  
Office of the Governor  
Pago Pago, AS 96799  
International Number (684) 633-2304

## Arizona

Mr. Daniel Roe, Executive Director  
Arizona Emergency Response Commission  
Division of Emergency Management  
5636 East McDowell Road  
Phoenix, AZ 85008  
(602) 231-6346

## Mr. Bill Quinn

Arizona Department of Environmental Quality  
Pollution Prevention Unit Manager  
3033 N. Central  
Phoenix, AZ 85012  
(602) 207-4203

## Arkansas

Mr. John Ward  
Arkansas Department of Pollution Control and Ecology  
P.O. Box 8913  
8001 National Drive  
Little Rock, AR 72209-8913  
(501) 562-7444

## California

Mr. Stephen Hanna  
California Environmental Protection Agency  
Assistant for Environmental Information  
555 Capitol Mall  
Suite 235  
Sacramento, CA 95814  
(916) 324-9924  
shanna@hw1.ca.hw.net.gov

## Colorado

Ms. Tamera Vanhorn  
Colorado Emergency Planning Commission  
Colorado Department of Public Health and Environment  
4300 Cherry Creek Drive South  
Denver, CO 80222-1530  
(303) 692-3017  
tamera.van@state.co.us

## Commonwealth of Northern Mariana Islands

Mr. Frank Russell Meecham, III  
Division of Environmental Quality  
Commonwealth of the Northern Mariana Islands  
Doctor Torres Hospital  
P.O. Box 1304  
Saipan, MP 96950  
International Number (670) 234-6984

**Connecticut**

Mr. Joseph Pulaski  
 Department of Environmental Protection  
 SERC Administrator  
 C/O Waste Management  
 79 Elm St.  
 Hartford, CT 06106-5127  
 (860)424-3373

**Delaware**

Mr. David Fees  
 Department of Natural Resources and  
 Environmental Control  
 Division of Air and Waste Management  
 89 King's Highway  
 P.O. Box 1401  
 Dover, DE 19903  
 (302) 739-4791  
[www.state.de.us/gov/agency](http://www.state.de.us/gov/agency)

**District of Columbia**

Ms. Michele Penick  
 Environmental Planning Specialist  
 Emergency Response Commission for Title III  
 2000 14th Street, NW, 8th Floor  
 Washington, DC 20009  
 (202) 673-2101 (ext. 3159)

**Florida**

Mr. Sam Brackett  
 State Emergency Response Commission  
 Florida Department of Community Affairs  
 2555 Shumard Oak Blvd.  
 Tallahassee, FL 32399-2100  
 (904) 413-9928  
 In Florida: 800-635-7179  
[www.state.fl.us/comaff/dca.html](http://www.state.fl.us/comaff/dca.html)

**Georgia**

Mr. Burt Langley  
 Georgia Emergency Response Commission  
 7 Martin Luther King Drive  
 Room 139  
 Atlanta, GA 30334  
 (404) 656-6905

**Guam**

Ms. Conchita Tatano, Director  
 Guam EPA  
 Air and Land Division  
 P.O. Box 20439  
 Barrigada, GU 96921  
 International Number (671) 646-8863

**Hawaii**

Ms. Marsha Mealey  
 Hawaii State Emergency Response Commission  
 Hawaii State Department of Health  
 P.O. Box 3378  
 919 Ala Moana Blvd., Room 206  
 Honolulu, HI 96814  
 (808) 586-4694

**Idaho**

Ms. Margaret Ballard, Chief of Staff  
 Idaho Emergency Response Commission  
 4040 Guard Street  
 Gowen Field  
 P.O. Box 83720  
 Boise, ID 83720-3401  
 (208) 334-3263

**Illinois**

Mr. Joe Goodner  
 Illinois EPA  
 Office of Chemical Safety  
 Emergency Planning Unit  
 P.O. Box 19276  
 2200 Churchill Road  
 Springfield, IL 62794-9276  
 (217) 785-0830  
[epa8538@epa.st.il.us](mailto:epa8538@epa.st.il.us)

**Indiana**

Ms. Paula Smith  
 Indiana Department of Environmental Management  
 Office of Pollution Prevention Technical Assistance  
 100 North Senate Ave. (N-1355)  
 P.O. Box 6015  
 Indianapolis, IN 46206-6015  
 (use complete address on all mail and deliveries)  
 (317) 232-8172  
[psmit@opn.dem.st.in.us](mailto:psmit@opn.dem.st.in.us)

**Iowa**

Mr. Pete Hamlin  
 Bureau Chief of Air Quality  
 Department of Natural Resources  
 Wallace Office Bldg.  
 7900 Hickman Rd., Suite I  
 Urbandale, IA 50322  
 (515) 281-8852

**Kansas**

Mr. Jon Flint  
 Kansas Emergency Response Commission  
 Right-to-Know Program  
 J Street and 2 North  
 Forbes Field Building 283  
 Topeka, KS 66620  
 (913) 296-1690

**Kentucky**

Mr. Alex Barber  
 Ms. Gayla Steward  
 Kentucky Department for Environmental Protection  
 14 Reilly Road  
 Frankfort, KY 40601-1132  
 (502) 564-2150  
 barber@inrpath.nr.state.ky.us

**Louisiana**

Ms. Linda Brown  
 Department of Environmental Quality  
 Office of Secretary  
 P.O. Box 82263  
 7290 Bluebonnet Road  
 Baton Rouge, LA 70884-2263  
 (504) 765-0737  
 lindab@deq.st.la.us

**Maine**

Ms. Rayna Leibowitz  
 State Emergency Response Commission  
 State House Station Number 72  
 Augusta, ME 04333  
 (207) 287-4080  
 In Maine: (800) 452-8735  
 rayna.b.leibowitz@st.me.us.

**Maryland**

Ms. Patricia Williams  
 State Emergency Response Commission  
 Maryland Department of the Environment  
 Toxics Inventory Program  
 2500 Broening Highway  
 Baltimore, MD 21224  
 (410) 631-3800

**Massachusetts**

Mr. William T. Panos  
 Massachusetts Department of Environmental Protection  
 Bureau of Waste Prevention  
 1 Winter Street  
 Boston, MA 02108  
 (617) 574-6820  
 wpanos@st.ma.us

**Michigan**

Mr. Robert Jackson, Chief  
 Grants and Information  
 State Emergency Response Commission  
 Department of Environmental Quality  
 Assistance Division  
 333 S. Capitol  
 P.O. Box 30457  
 Lansing, MI 48933  
 (517)373-2731

**certified mail only:**

SARA Title III  
 333 S. Capitol  
 Town CTR, 2nd Floor  
 Lansing, MI 48909  
 (517)373-8481

**Minnesota**

Mr. John Chikkala  
 Minnesota Emergency Response Commission  
 B5 State Capitol Building  
 75 Constitution Ave.  
 St Paul, MN 55155  
 (612) 282-5396

**Mississippi**

Mr. John David Burns  
 Mississippi Emergency Response Commission  
 Mississippi Emergency Management Agency  
 P.O. Box 4501  
 Jackson, MS 39296-4501

**certified mail only:**

1410 Riverside Drive  
 Jackson, MS 39202  
 (601) 960-9000

**Missouri**

Mr. Eugene Nickel  
 Missouri Department of Natural Resources  
 Technical Assistant Program  
 P.O. Box 176  
 Jefferson City, MO 65102  
 (573) 526-6627

**certified mail only:**

Missouri Department of Natural Resources  
 1659 B East Elm Street  
 Jefferson City, MO 65101  
 (314) 526-3901 or  
 (314) 526-3371  
<http://www.state.mo.st.us/dnr/deq/tap/hometap.htm>

**Montana**

Mr. Tom Ellerhoff  
 Montana Emergency Response Commission  
 Environmental Sciences Division  
 Department of Health & Environmental Sciences  
 Capitol Station  
 Cogswell Building C-108  
 P.O. Box 200901  
 Helena, MT 59620-0901  
 (406) 444-5263

**Nebraska**

Mr. Mike Mallory, Coordinator  
 State of Nebraska Department of Environmental Quality  
 P.O. Box 98922  
 Lincoln, NE 68509-8922

**certified mail only:**

1200 N Street, Suite 400  
 Lincoln, NE 68509  
 (402) 471-4230

**Nevada**

Ms. Alene Coulson  
 Division of Environmental Protection  
 333 West Nye Lane  
 Carson City, NV 89706-0866  
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**New Hampshire**

Mr. Leland Kimball  
 New Hampshire Office of Emergency  
 Management Agency  
 Title III Program  
 State Office Park South  
 107 Pleasant Street  
 Concord, NH 03301-3809  
 (603) 271-2231

**New Jersey**

Mr. Andrew Opperman  
 Department of Environmental Protection  
 EPCRA Section 313  
 Bureau of Chemical Release Information & Prevention  
 P.O. Box 405  
 Trenton, NJ 08625-0405  
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 aopperman@dep.state.nj.us

**New Mexico**

Mr. Max Johnson, Coordinator  
 New Mexico Emergency Response Commission  
 Chemical Safety Office, Emergency Management Bureau  
 P.O. Box 1628  
 Santa Fe, NM 87504-1628

**certified mail only:**

4491 Cerrillos Road  
 Santa Fe, NM 87505  
 (505) 827-9223

**New York**

Mr. Sitansu Ghosh  
 New York Emergency Response Commission  
 New York State Department Of Environmental  
 Conservation  
 Bureau of Spill Prevention and Response  
 50 Wolf Road /Room 340  
 Albany, NY 12233-3510  
 (518) 457-4107

**North Carolina**

Ms. Ester Castaldo  
 North Carolina Emergency Response Commission  
 North Carolina Division of Emergency Management  
 116 West Jones Street  
 Raleigh, NC 27603-1335  
 (919) 733-3865

**North Dakota**

Mr. Robert Johnston  
 North Dakota Emergency Response Commission  
 Division of Emergency Management  
 P.O. Box 5511  
 Bismarck, ND 58506-5511

**certified mail only:**

Fraine Barracks Road, Building 35  
 Bismarck, ND 58506-5511  
 (701) 328-2111

**Ohio**

Ms. Cindy DeWulf  
 Ohio EPA  
 Division of Air Pollution Control  
 P.O. Box 1049  
 1800 Watermark Drive  
 Columbus, OH 43216-1049  
 (614) 644-4830

**Oklahoma**

Ms. Monty Elder  
 Department of Environmental Quality Support Services  
 1000 N.E. 10th Street  
 Oklahoma City, OK 73117-1212  
 (405) 271-1400 ext. 192  
 monty.elder@oklaoss.st.ok.us

**Oregon**

Mr. Bob Albers  
 Oregon Emergency Response Commission  
 c/o State Fire Marshall  
 4760 Portland Road, Northeast  
 Salem, OR 97305-1760  
 (503) 378-3473 (ext. 262)

**Pennsylvania**

Mr. Thomas J. Ward, Jr.  
 Pennsylvania Emergency Management Council  
 Bureau of Worker and Community Right-to-Know  
 Room 1503  
 Labor and Industry Building  
 7th & Forster Streets  
 Harrisburg, PA 17120  
 (717) 783-2071

**Puerto Rico**

Mr. Genaro Toress  
 Director of Superfund and Emergency Division  
 Title III-SARA Section 313  
 Puerto Rico Environmental Quality Board  
 Sernades Junco Station  
 P.O. Box 11488  
 Santurce, PR 00910

**certified mail only:**

Environmental Quality Board  
 Emergency Response and Remedial Office  
 National Plaza #431  
 Ponce de Leon Avenue  
 Hato Rey, PR 00917  
 International Number (809) 766-8056

**Rhode Island**

Ms. Martha Delaney Mulcahey  
 Rhode Island Department of Environmental  
 Management  
 Division of Air Resources  
 291 Promenade Street  
 Providence, RI 02908-5767  
 Attn: Toxic Release Inventory  
 (401) 277-2808

**South Carolina**

Mr. Michael Juras  
 Bureau of Air Quality  
 SC Department of Health and  
 Environmental Control  
 2600 Bull Street  
 Columbia, SC 29201  
 (803) 734-7236  
[jurasms@columb31.dhec.state.sc.us](mailto:jurasms@columb31.dhec.state.sc.us)

**South Dakota**

Ms. Lee Ann Smith, TRI Coordinator  
 South Dakota Department of Environment and  
 Natural Resources  
 523 East Capitol  
 Pierre, SD 57501-3181  
 (605) 773-3296  
[leeanns@denr.st.sd.us](mailto:leeanns@denr.st.sd.us)

**Tennessee**

Ms. Betty Eaves, Administrator  
 Tennessee Emergency Response Council  
 Tennessee Emergency Management Agency  
 3041 Sidco Drive  
 Nashville, TN 37204  
 (615) 741-2986  
 1-800-262-3300 (in Tennessee)  
 1-800-258-3300 (out of state)

**Texas**

U.S. Postal Service Delivery including Certified Mail  
 Ms. Becky Kurka  
 Office of Pollution Prevention and Recycling  
 Texas Natural Resource Conservation Commission  
 P.O. Box 13087 (MC-112)  
 Austin, TX 78711-3087  
 (512) 239-3100  
[bkurka@tnrcc.state.tx.us](mailto:bkurka@tnrcc.state.tx.us)

**overnight express mail only:**

(MC-112)  
 12100 Park 35 Building E  
 Austin, TX 78753

**Utah**

Mr. Neil Taylor  
 Utah Hazardous Chemical Emergency Response  
 Commission  
 Utah Department of Environmental Quality  
 Division of Environmental Response and  
 Remediation  
 P.O. Box 14484  
 168 North 1950 West, 1st Floor  
 Salt Lake City, UT 84116-4840  
 (801) 536-4100

**Vermont**

Mr. Gary Gulka  
 Pollution Prevention Section  
 103 S. Main St.  
 Westbury, VT 05671-0411  
 (802) 241-3626

**Virginia**

Ms. Cathy Harris  
 Virginia Emergency Response Council  
 c/o Virginia Dept. of Environmental Quality  
 P.O. Box 10009  
 Richmond, VA 23240-0009  
 (804) 698-4408 or 4489  
<http://www.deq.state.va.us/clharris>

**certified mail only:**

Virginia Department of Environmental Quality  
SARA Title III Program  
9th Floor, 629 E. Main St.  
Richmond, VA 23219  
(804) 762-4489

**Virgin Islands**

Mr. Ben Nazario  
Department of Planning and Natural Resources  
U.S. Virgin Islands Emergency Response Commission  
Title III  
Nisky Center, Suite 231  
Charlotte Amalie  
St. Thomas, VI 00802  
(809) 773-0565 (St. Croix)  
(808) 774-3320 (St. Thomas)

**Washington**

Ms. Idell Hansen  
CRTK Unit  
Department of Ecology  
P.O. Box 47659  
Olympia, WA 98504-7659  
(360-)407-6727 or (800)633-7585  
ihan461@ecy.wa.gov

**Federal Express or UPS mail only:**

Department of Ecology  
300 Desmond Drive  
Lacey, WA 98503

**West Virginia**

Mr. Carl L. Bradford, Director  
West Virginia Emergency Response Commission  
West Virginia Office of Emergency Services  
Main Capital Building 1, Room EB-80  
Charleston, WV 25305-0360  
(304) 558-5380

**Wisconsin**

Department of Natural Resources  
101 South Webster  
P.O. Box 7921  
Madison, WI 53707  
Attn: Mr. Wes Taylor, Toxics Coordinator  
(608) 266-9255  
taylow@dnr.state.wi.us

**Wyoming**

Chairman, Mr. Mike Davis  
Wyoming Emergency Response Commission  
Wyoming Emergency Management Agency  
Department of Environmental Quality  
P.O. Box 1709  
5500 Bishop Blvd.  
Cheyenne, WY 82009  
(307) 777-4900

**Notes:**

(1) If an Indian tribe has chosen to act independently of a state for the purpose of section 313 reporting, facilities located within that Indian community should report to the tribal SERC, or until the SERC is established, the Chief Executive Officer of the Indian tribe, as well as to EPA;  
(2) Facilities located within the Territories of the Pacific should send a report to the Chief Administrator of the appropriate territory, as well as to EPA.

**APPENDIX G**

# APPENDIX G. SECTION 313 EPA REGIONAL CONTACTS

## Region 1

Pesticides & Toxics Branch  
USEPA Region 1 (SPT)  
Assistance & Pollution Prevention Office  
One Congress Street  
Boston, MA 02203  
(617) 565-3230

Connecticut, Massachusetts, Maine,  
New Hampshire, Rhode Island, Vermont

## Region 2

Pesticides & Toxics Branch  
USEPA Region 2 (MS-105)  
2890 Woodbridge Avenue, Building 10  
Edison, NJ 08837-3679  
(732) 906-6890

New Jersey, New York, Puerto Rico, Virgin Islands

## Region 3

Toxics Enforcement Branch  
USEPA Region 3 (3WC33)  
1650 Arch Street  
Philadelphia, PA 19103-2029  
(215) 566-2072

Delaware, Maryland, Pennsylvania, Virginia,  
West Virginia, District of Columbia

## Region 4

Pesticides & Toxics Branch  
EPCRA Unit A  
USEPA Region 4  
Atlanta Federal Center  
100 Alabama St., S.W.  
Atlanta, GA 30303-3104  
(404) 562-9191

Alabama, Florida, Georgia, Kentucky, Mississippi,  
North Carolina, South Carolina, Tennessee

## Region 5

Pesticides & Toxic Substances Branch  
USEPA Region 5 (DRT-14J)  
77 West Jackson Blvd.  
Chicago, IL 60604  
(312) 886-6219

Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

## Region 6

Pesticides & Toxic Substances Branch  
USEPA Region 6 (6PDT)  
1445 Ross Avenue  
Suite 1200  
Dallas, TX 75202-2733  
(214) 655-8013

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

## Region 7

Toxics & Pesticides Branch (ARTD-TSPP)  
USEPA Region 7  
726 Minnesota Avenue  
Kansas City, KS 66101  
(913) 551-7646

Iowa, Kansas, Missouri, Nebraska

## Region 8

Toxic Substances Branch  
USEPA Region 8 (8P2-TX)  
999 18th Street, Suite 500  
Denver, CO 80202-2466  
(303) 312-6018

Colorado, Montana, North Dakota, South Dakota,  
Utah, Wyoming

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**Region 9**

Pesticides & Toxics Branch  
USEPA Region 9 (CMD-4-2)  
75 Hawthorne Street  
San Francisco, CA 94105  
(415) 744-1121

Arizona, California, Hawaii, Nevada, American  
Samoa, Guam, Commonwealth of the Northern  
Mariana Islands

**Region 10**

Pesticides & Toxic Substances Branch  
USEPA Region 10 (WCM-128)  
1200 Sixth Avenue  
Seattle, WA 98101  
(206) 553-4016

Alaska, Idaho, Oregon, Washington

## APPENDIX H

# APPENDIX H. SECTION 313 RELATED MATERIALS AND INFORMATION ACCESS

To receive a copy of any of the section 313 documents listed below, check the box(es) next to the desired document(s). There is no charge for any of these documents. Be sure to type or clearly print your full mailing address in the space provided on this form. Send this request form/or call toll-free 1-800-490-9198:

U.S. EPA/NCEPI  
P.O. Box 42419  
Cincinnati, OH 45242-2419  
(800) 490-9198

Fax: (513)489-8695

Internet:

<http://www.epa.gov/ncepihom/index.html>

☐ **40 CFR 372, Toxic Chemical Release Reporting; Community Right-to-Know; Final Rule**

A reprint of the final section 313 rule as it appeared in the Federal Register (FR) February 16, 1988 (53 FR 4500) (OTSFR 021688).

☐ **Toxic Chemical Release Inventory Reporting Forms and Instructions for 1997, February 1998 (EPA 745-K-98-001)**

☐ **Consolidated List of Chemicals Subject to Reporting Under the Act (Title III List of Lists) (EPA 740-R-95-001)**

A consolidated list of specific chemicals covered by the Emergency Planning and Community Right-to-Know Act. The list contains the chemical name, CAS Registry Number, and reporting requirement(s) to which the chemical is subject.

☐ **The Emergency Planning and Community Right-to-Know Act: Section 313 Release Reporting Requirements, December 1997 (EPA 745/K-97-002)**

This brochure alerts businesses to their reporting obligations under section 313 and assists in determining whether their facility is required to report. The brochure contains the EPA regional contacts, the list of section 313 toxic chemicals and a description of the Standard Industrial Classification (SIC) codes subject to section 313.

☐ **Supplier Notification Requirements (EPA 560/4-91-006)**

This pamphlet assists chemical suppliers who may be subject to the supplier notification requirements under section 313 of EPCRA. The pamphlet explains the supplier notification requirements, gives examples of situations which require notification, describes the trade secret provision, and contains a sample notification.

☐ **Trade Secrets Rule and Form (53 FR 28772)**

A reprint of the final rule that appeared in the *Federal Register* of July 29, 1988. This rule implements the trade secrets provision of the Emergency Planning and Community Right-to-Know Act (section 322) and includes a copy of the trade secret substantiation form.

☐ **Common Synonyms for Chemicals Listed Under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPA 745-R-95-008)**

This glossary contains chemical names and their synonyms for substances covered by the reporting requirements of EPCRA, section 313. The glossary was developed to aid in determining whether a facility manufactures, processes, or uses a chemical subject to section 313 reporting.

☐ **Executive Order 12856 - Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements: Questions and Answers (EPA 745-R-95-011)**

This document assists Federal facilities in complying with Executive Order 12856. This information has been compiled by EPA from questions received from Federal facilities. This document is intended for the exclusive use of Federal facilities in complying with sections 302, 303, 304, 311, 312, and 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 and the Pollution Prevention Act of 1990, as directed by the Executive Order.

- ☐ **Section 313 of the Emergency Planning and Community Right-to-Know Act; Questions and Answer** November 1997 (EPA 745-B-97-008)
  - ☐ **Toxics Release Inventory: Reporting Modifications Beginning with 1995 Reporting Year** February 1995 (EPA 745-R-95-009)
  - ☐ **1995 Toxics Release Inventory Public Data Release State Fact Sheets** (EPA 745-F-97-001)
- The fact sheets in this document summarize the basic 1995 Toxics Release Inventory (TRI) data for each state. This document is designed as a companion volume to EPA's 1995 Toxic Release Inventory Public Data Release (EPA 745-R-97-005), a more detailed examination of TRI data for 1995 and previous years.
- ☐ **1995 Toxics Release Inventory Public Data Release** (EPA 745-R-97-005)
- This publication summarizes TRI data submitted for reporting year 1995: where, how much, and which types of chemicals are being released into the environment and it provides comparisons to TRI submissions for earlier years. Extensive tables itemize releases and transfers by media, chemicals, location and industry.
- Similar reports for 1987-1994 are available for sale from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20420-9325 (202-512-1800).**
- Industry Specific Technical Guidance Documents**
- EPA has developed a group of smaller, individual guidance documents that target activities in industries who primarily process or otherwise use the listed toxic chemicals.
- ☐ **Monofilament Fiber Manufacture,** January 1988 (EPA 560-4-88-004a)
  - ☐ **Printing Operations,** January 1988 (EPA 560-4-88-004b)
  - ☐ **Electrodeposition of Organic Coatings,** January 1988 (EPA 560-4-88-004c)
  - ☐ **Spray Application of Organic Coatings,** January 1988 (EPA 560-4-88-004d)
  - ☐ **Semiconductor Manufacture,** January 1988 (EPA 560-4-88-004e)
  - ☐ **Formulation of Aqueous Solutions,** March 1988 (EPA 560-4-88-004f)
  - ☐ **Electroplating Operations,** January 1988 (EPA 560-4-88-004g)
  - ☐ **Textile Dyeing,** February 1988 (EPA 560-4-88-004h)
  - ☐ **Presswood & Laminated Wood Products Manufacturing,** March 1988 (EPA 560-4-88-004i)
  - ☐ **Roller, Knife, and Gravure Coating Operations,** February 1988 (EPA 560-4-88-004j)
  - ☐ **Paper and Paperboard Production,** February 1988 (EPA 560-4-88-004k)
  - ☐ **Leather Tanning and Finishing Processes,** February 1988 (EPA 560-4-88-004l)
  - ☐ **Wood Preserving,** February 1988 (EPA 560-4-88-004p)
  - ☐ **Rubber Production and Compounding,** March 1988 (EPA 560-4-88-00q)
  - ☐ **Estimating Releases and Waste Treatment Efficiencies,** December 1987 (EPA 560-4-88-002)
  - ☐ **Section 313 Reporting: Issue Paper Classification and Guidance for the Metal Fabrication Industry,** January 1990 (EPA 745-B-90-100)
  - ☐ **Section 313 Emergency Planning Community Right-to-Know Act Guidance for Food Processors,** June 1990 (EPA 560-4-90-014)

## Chemical Specific Guidance Documents

EPA has developed a group of guidance documents specific to individual chemicals and chemical categories.

- ☐ **Toxic Release Inventory  
List of Toxic Chemicals within the  
Polychlorinated Alkanes Category and  
Guidance for Reporting, February 1995  
(EPA 745-R-95-001)**
- ☐ **Toxic Release Inventory  
List of Toxic of Chemicals within the  
Water Dissociable Nitrate Compounds  
Category and Guidance for Reporting  
May, 1996 (EPA 745-R-96-004)**
- ☐ **Toxic Release Inventory  
List of Toxic of Chemicals within the  
Polycyclic Aromatic Compounds Category  
February 1995 (EPA 745-R-95-003)**
- ☐ **Toxic Release Inventory  
List of Toxic Chemicals within the  
Nicotine and Salts Category and Guidance  
for Reporting, February 1995  
(EPA 745-R-95-004)**
- ☐ **Toxic Release Inventory  
List of Toxic Chemicals within the  
Strychnine and Salts Category and Guidance  
for Reporting, February 1995  
(EPA 745-R-95-005)**
- ☐ **Toxic Release Inventory  
List of Toxic Chemicals within the  
Glycol Ethers Category and Guidance for  
Reporting,  
May 1995 (EPA 745-R-95-006)**
- ☐ **Emergency Planning and Community Right-  
to-Know Section 313: List of Toxic Chemicals  
within the Chlorophenols Category,  
November 1994 (EPA 745-B-95-004)**
- ☐ **Emergency Planning and Community Right-  
to-Know Section 313: Guidance for Reporting  
Aqueous Ammonia, July 1995  
(EPA 745-R-95-012)**
- ☐ **Emergency Planning and Community  
Right-to-Know Section 313: List of Toxic Chemi-  
cals, September, 1996 (EPA 745-B-96-002)**

- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for Report-  
ing Sulfuric Acid (acid aerosols including  
mists, vapors, gas, fog and other airborne  
forms of any particle size), (EPA 745-B-97-007)**

- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for  
Reporting Hydrochloric Acid (acid aerosols  
including mists, vapors, gas, fog and other  
airborne forms of any particle size),  
(EPA 745-B-98-002)**

## Industry Specific Guidance Documents

EPA has developpe a group of guidance documents specific to individual Industry.

- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for RCRA  
Subtitle C TSD Facilities and Solvent Recovery  
Facilities (Version 1.0), October 1997  
(EPA 745-B-97-015)**
- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for Petro-  
leum Bulk Storage Facilities (Version 1.0),  
October 1997 (EPA 745-B-97-014)**
- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for Coal  
Mining Facilities (Version 1.0), October 1997.  
EPA 745-B-97-012**
- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for Elec-  
tricity Generating Facilities, (Version 1.0)  
EPA 745-B-97-016**
- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for  
Chemical Distribution Facilities (Version 1.0)  
EPA 745-B-98-013**
- ☐ **Emergency Planning and Community Right-  
to-Know Act Section 313, Guidance for Metal  
Mining Facilities (Version 1.0)  
EPA745-B-97-011**

\_\_\_\_\_

Please type mailing address here (Do not attach business cards)

Name/Title \_\_\_\_\_

Company Name \_\_\_\_\_

Mail Stop \_\_\_\_\_

Street Address \_\_\_\_\_

P.O. Box \_\_\_\_\_

City/State/Zip Code \_\_\_\_\_

## OTHER RELEVANT SECTION 313 MATERIALS

### Toxic Release Inventory — On-line Database

A computerized on-line database of the toxic release inventory data is available through the National Library of Medicine's (NLM) TOXNET on-line system 24 hours a day. Other NLM files on TOXNET can provide supporting information in such areas as health hazards and emergency handling of toxic chemicals. Information on accessing the TOXNET system is available from: TRI Representative, Specialized Information Services, National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894, (301) 496-6531, average cost of \$18.00 per hour.

RTK-Net is an online network concerned with environmental issues, in particular, matters arising from the passage of the right-to-know provisions embodied in the EPCRA legislation. RTK-net was established by two non-profit organizations (Unison Institute and OMB Watch) to provide access to TRI, link TRI with other environmental data, and exchange information among public interest groups. RTK-Net is a full-service center providing free dial in access privileges to government and industry as well, more complete database services, training and technical support, e-mail, and electronic conferences pertaining to issues such as health, activism, and environmental justice. For more information contact RTK-Net, 1742 Connecticut Ave., NW, Washington, DC 20009-1146 or phone 202-797-7200. You can register on-line by modem at 202-234-8570, parameters 8,n,1, and log in as "public".

### Toxics Release Inventory - CD-ROM

The CD-ROM contains the complete Toxic Release Inventory since 1987, as well as Chemical Factsheets containing health and environmental effects information for TRI chemicals. User-friendly software provides the capability to search data by facility, location, chemical, SIC code, and many other access points. Other features allow flexibility in printing standard and custom reports, data downloading, and calculating releases for search sets (for example, calculate average air releases for all pulp and paper manufacturers). The same disc is available from GPO and NTIS, although prices differ:

From GPO (Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7954):

1987-1995 - S/N 055-000-00582-6, \$43.00.

From NTIS (5285 Port Royal Road, Springfield, VA 22161, 703-605-6000):

1987-1995 - PB97-502587, \$45.00.

### Toxic Release Inventory (by State) - Diskettes

Diskettes containing frequently used data elements from TRI are available on diskette in dBase and Lotus formats. Accompanying documentation describes section 313 reporting requirements, and instructions for loading into dBase and Lotus software. dBase and Lotus software are not included. Diskettes from GPO and NTIS are the same, although the pricing formula differs between agencies. Prices and order numbers shown are for the 1993 disks. Earlier years are also available. The same data can be downloaded or ordered on disk from the GPO Federal Bulletin Board. Call GPO User Support at 202-512-1530 for more information.

From GPO (Superintendent of Documents, U.S. Government Printing Office, Attn: Electronic Products, P.O. Box 37082, Washington, DC 20013-7082 (202-512-1530)

Individual state (number of disks per state vary):

3.50" disk - \$15/disk

From NTIS (5285 Port Royal Road, Springfield, VA 22161, 703-605-6000):

Lotus & dBase formats.  
1987 to 1992 Data available.  
contact NTIS for price quote.

### Toxic Release Inventory- Magnetic Tapes and Cartridge

Magnetic tapes contain the complete Toxic Release Inventory for 1993. Accompanying manual includes brief overviews of Section 313 reporting requirements, a sample Form R, lists of regional and states contacts and tape layout information. The same tapes are available from GPO and NTIS, although prices differ. Updated versions are also available for earlier years.

From GPO (Superintendent of Documents, U.S. Government Printing Office, Attn: Electronic Products, P.O. Box 37082, Washington, DC 20013-7082 (202-512-1530)

6250 (BPI) Density: \$390.

From NTIS (5285 Port Royal Road, Springfield, VA 22161, 703-605-6000);

1600 \$895.00 or 6250 (BPI) Density \$820.00 or  
3480 cartridge \$895.00: (PB95 - 503876)

**Toxic Release Inventory 1994: Reporting  
Facilities Names and Addresses — Magnetic Tape**

Note: Magnetic Tapes will not be produced for 1994 and later reporting years.

**Section 313 Roadmaps Database — Diskette**

A database of sources of information on the toxic chemicals listed in section 313. The database, created in 1988 and updated in 1990, is intended to assist users of the Toxics Release Inventory data in performing exposure and risk assessments of these toxic chemicals. The Roadmaps system displays information, including the section 313 toxic chemicals' health and environmental effects, the applicability of federal, state, and local regulations, and monitoring data. Available from: National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 605-6000, Document Number: PB92-501972, \$212.00.

**Consolidated List of Chemicals Subject to  
Reporting Under the Act (Title III List of Lists), June  
1994**

Available as an IBM compatible disk from: The National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 605-6000, Document Number: PB95-503165, \$97.00.

**The Toxic Release Inventory: Meeting the Challenge  
(April 1988)**

This 19 minute videotape explains the toxic release reporting requirements for plant facility managers and others. State governments, local Chambers of Commerce, labor organizations, public interest groups, universities, and others may also find the video program useful and informative.

3/4 inch = \$30.75; VHS = \$22.00.

To purchase, write or call:

Color Film Corporation  
Video Division  
770 Connecticut Avenue  
Norwalk, CT 06854  
(800) 882-1120

**Chemicals in Your Community, A Citizen's Guide to  
the Emergency Planning and Community Right-to-  
Know Act, September 1988 (OSWER-88-002)**

This booklet is intended to provide a general overview of the EPCRA requirements and benefits for all audiences. Part I of the booklet describes the provisions of EPCRA and Part II describes more fully the authorities and responsibilities of the groups of people affected by the law. Available through written request at no charge from:

Emergency Planning and Community  
Right-to-Know Information Hotline  
Mailcode: 5101  
401 M Street, SW  
Washington, DC 20460  
Hotline 1-800-535-0202

**POLLUTION PREVENTION  
INFORMATION**

An up-to-date source of information on pollution prevention is the Enviro\$en\$e System, a computerized information network. Enviro\$en\$e includes a directory of representatives from Federal, State, and local governments; current news on pollution prevention activities; program summaries for government agencies, public interest groups, academic institutions, trade associations, and industry; a data base of industry case studies; a calendar of conferences, training seminars, and workshops; and specialized bulletin boards dedicated to various topics. Enviro\$en\$e can be accessed in two ways:

- 1) Bullentin Board-modem:  
(703)908-2092, Parameters: 8,n,l settings: ansi or v+100  
user support: (703)908-2007.
- 2) World Wide Web-internet:  
<http://es.inel.gov/>  
under heading "EPA P<sub>2</sub> and other initiatives"

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The Pollution Prevention Information Clearinghouse (PPIC) was established as part of EPA's response to the Pollution Prevention Act of 1990, which directed the Agency to compile information, including a database, on management, technical, and operational approaches to source reduction. PPIC provides information to the public and industries involved in conservation of natural resources and in reduction or elimination of pollutants in facilities, workplaces, and communities.

To request EPA information on pollution prevention or obtain factsheets on pollution prevention from various state programs call the PPIC reference and referral service at 202-260-1023, or fax a request to 202-260-0178, or write to:

PPIC  
Mail Code 3404  
401 M St., SW  
Washington, DC 20460



United States  
Environmental Protection Agency  
(2844)  
Washington, DC 20460

Official Business  
Penalty for Private Use \$300

**WHERE TO SEND REPORTS**  
**REGULAR, CERTIFIED MAIL, OVERNIGHT**  
**OR HAND DELIVERED**  
*SECTION A.6 (PAGE 3)*

**\*FOR AFR TECHNICAL SUPPORT**  
**CALL (703) 816-4434**  
**THE USER SUPPORT HOTLINE NUMBER**  
**IS TO BE USED FOR THE AFR SOFTWARE**  
**AND DOES NOT PROVIDE REGULATORY**  
**SUPPORT.**  
*SECTION A.5 (PAGE 3)*

**EMERGENCY PLANNING AND**  
**COMMUNITY RIGHT-TO-KNOW**  
**HOTLINE 1-(800) 535-0202 OR**  
**(703) 412-9877**  
**HOURS OF OPERATIONS ARE**  
**9:00 AM TO 6:00 PM E.S.T.**  
*SECTION A.7 (PAGE 4)*

**HOW TO OBTAIN FORMS**  
**AND OTHER**  
**INFORMATION**  
*SECTION A.7 (PAGE 4)*

**SECTION 313 EPA**  
**REGIONAL CONTACTS**  
*APPENDIX G.*

**STATE DESIGNATED**  
**SECTION 313 CONTACTS**  
*APPENDIX F.*

**TABLE OF CONTENTS FOR YOUR**  
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