

PLAINTIFF'S EXHIBIT

UC-P-26

2-14-91

*Sub file & return
Read - B*

BUSINESS CONFIDENTIAL



INTERNAL CORRESPONDENCE

POLYOLEFINS DIVISION

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K. D. Stotler, Star (306)

DATE: January 25, 1991

DEPT: POD & S&CM HS&EA

COPY: W. A. Mazzolini, K3457, Danbury

SUBJECT: UPDATED OSHA INSTRUCTIONS ON THE
HAZARD COMMUNICATION STANDARD

I have attached for your review and location use a copy of OSHA's compliance directive (CPL 2-2.38C) re: HAZCOM and an excellent memorandum prepared by Mark Duvall outlining its major new points. I urge each of you to read Mark's document closely and let me know if any major compliance concerns arise at your location.

In my reading of the document I see no areas where this document contradicts information previously sent you. In fact, in many cases it officially endorses the guidelines provided earlier.

Should you have any questions, please give either Mark or me a call.

Regards,

T. P. Raby
T. P. Raby

TPR/jgh
Attachment

DE 008572

DE 008573

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC.

Law Department

39 Old Ridgebury Road
Danbury, CT 06817-0001

BUSINESS CONFIDENTIAL

January 15, 1991

To: See Attached Distribution List

From: M. N. Duvall

Re: Updated OSHA Instruction on the
Hazard Communication Standard

Attached is a revised OSHA compliance directive on the hazard communication standard ("HCS") which gives several new interpretations of the HCS. OSHA Instruction CPL 2-2.38C (Oct. 22, 1990) ("Instruction"). The new guidance concerns computerized MSDSs, use of fax machines to make MSDSs available, relationship with the laboratory standard and with HAZWOPER, and multi-employer worksites (such as on-site contractors), among other topics. Appendix A of the Instruction contains most of the new information. This memorandum summarizes the major new points. It is organized by paragraph of the HCS.

BACKGROUND

The HCS compliance directive has been revised several times. The previous revision was OSHA Instruction CPL 2-2.38B (Aug. 15, 1988). Appendix A of the new version is 15 pages longer than that of the 1988 version.

The Instruction directs OSHA inspectors to evaluate employer compliance with the HCS during every inspection. (P. 5). The inspectors use the Instruction in inspecting for HCS compliance, and the Occupational Safety and Health Review Commission has looked to it as authoritative guidance on the meaning of HCS requirements.

The HCS is codified as 29 C.F.R. §§ 1910.1200 (general industry), 1926.59 (construction), and in the maritime standards.

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Paragraph (b)(2). Chemicals Covered

The HCS applies to "chemicals known to be present" in the workplace to which employees may be exposed under normal conditions of use or in foreseeable emergencies. This includes chemicals brought on-site by another employer, such as a contractor. It also includes hazards not created by the employer, such as silica exposure during concrete demolition. (P. A-2)

Byproducts are covered by the HCS. A manufacturer must anticipate hazardous byproducts that may be formed during downstream use of its products (e.g., plastics which are injection molded, carbon monoxide as a byproduct of gasoline). (Pp. A-2, A-9)

The following are examples of "chemicals" covered by the HCS, because they could release hazardous chemicals: portland cement, a carbide blade which is sharpened, steel coils which are cut, and castings which are ground up or welded. (P. A-10)

A chemical is not covered by the HCS if it is inextricably bound in a product (e.g., silica bound in an elastomer). (P. A-10)

Radioactivity and biological hazards are not covered by the HCS. Biological samples packed in a hazardous solvent are not covered, but the solvent is covered. (P. A-3)

A "foreseeable emergency" does not include accidental fires. Thus, chemicals only released during an accidental fire are exempt from the HCS. (A-9)

Nuisance dust as such is not included in the floor of substances considered hazardous under the HCS. Some particulates have individual PELs or TLVs and are therefore subject to the HCS; otherwise, particulates are not subject to the HCS unless they present a health or physical hazard other than physical irritant effects. (P. A-11)

Paragraph (b)(3). Laboratories

The definitions in the laboratory standard, 29 C.F.R. § 1910.1045, pertaining to what is a "laboratory" do not apply to the HCS. Thus, under those definitions a quality control lab is not considered a laboratory subject to the lab standard, but under the HCS a quality control lab is considered a laboratory subject to the partial lab exemption in the HCS. (Pp. 30, A-3)

Labeling requirements apply for shipped containers of hazardous chemicals leaving the establishment, even if shipped

to another establishment of the same company. (P. A-22) Jennifer Silk, OSHA's chief drafter of the HCS, told me that this interpretation applies even to samples shipped from a laboratory at one location (e.g., Taft) to a laboratory at a different location (e.g., South Charleston Technical Center). In addition, MSDS requirements apply to samples provided by manufacturers. (P. A-28) She indicated that this applies to samples sent from one UCC&P laboratory to another at a different location as well. Conversation of January 14, 1991.

According to Jennifer Silk, OSHA's position is that a lab sample becomes subject to the HCS labeling and MSDS requirements, and not to the lab standard, once it leaves the laboratory, even if it is sent to another laboratory of the same company. Thus, in her view an MSDS would need to be sent from a laboratory at one UCC&P location to a laboratory at another UCC&P location unless the receiving laboratory already had an MSDS for the sample.

Similarly, the sample would have to be labeled in accordance with HCS requirements, she said. The Instruction requires target organ effects information to appear on the labels of shipped containers, and she interprets that requirement to apply even to laboratory samples shipped between laboratories at different UCC&P locations. In her view, it is not sufficient to label containers of such samples with numerical ratings (e.g., HFS ratings) in lieu of target organ effects information, as may be done with in-plant containers. The reason that numerical systems are permitted for in-plant containers is that employees can be trained in the meaning of the system and on the hazards of the chemicals in the workplace. But for shipped containers, she said, it is foreseeable that personnel not trained in the numerical system and the hazards of the chemicals (e.g., loading dock personnel), could be exposed to the samples, and for that reason sample containers need target organ labeling. The concern is not for persons intended to be protected by DOT's hazard communication requirements, such as common carriers, but rather with UCC&P employees who may not have received the training that laboratory personnel may have received.

She did admit that in theory UCC&P could train all employees involved in the transportation of the laboratory samples in the meaning of HFS ratings, such as where samples are driven by UCC&P drivers between South Charleston, the South Charleston Technical Center, and Institute. But where samples are shipped (by mail, courier, etc.), she thought it would be very difficult for an employer to overcome the presumption of need for target organ information to appear on the label.

Paragraph (b)(4). Sealed Containers

Where only sealed containers of hazardous chemicals are handled, such as at warehouses and terminals, employers must obtain an MSDS if an employee requests one. The employer's attempt to obtain an MSDS must begin within one day of the request. (P. A-4)

Paragraph (b)(6). Complete Exemption

Waste is exempt from the HCS only if it is regulated under RCRA; if not RCRA-regulated, it is subject to the HCS. Chemicals brought to a waste site (e.g., acid brought in to neutralize waste) are covered by the HCS. (P. A-5)

The exemption for consumer products does not apply where employee exposure potential is greater than that of a consumer. Spray paint used in production runs is not exempt, but spray paint used in occasional, short, one-time applications is exempt. (P. A-5)

The exemption for articles does not apply if the item releases more than very small quantities (e.g., a few molecules or a trace amount) of a hazardous chemical during foreseeable use. This is an affirmation of the position taken by the D. C. Circuit in two cases, Durez Div. of Occidental Chemical Corp. v. OSHA, 906 F.2d 1 (D.C. Cir. 1990); General Carbon Co. v. OSHRC, 860 F.2d 479 (D.C. Cir. 1988). Consideration should be given to byproducts released if cut or burned as part of an object's normal conditions of use. (Pp. A-5 through A-7)

The articles exemption does not apply to bricks used in construction, since they release silica dust when cut. Lead acid batteries are not articles either, since they may spill. (P. A-6)

Wood dust and hazardous chemical additives in wood are not exempt under the exemption for wood. (P. A-7)

Paragraph (c). Definitions

The term "chemical manufacturer" includes someone who blends or mixes chemicals. (P. A-7)

The term "container" does not include a room or open area. Because not in a container, wood dust on the floor or a pile of sand on the ground does not have to be labeled. (P. A-8)

Engines, fuel tanks, and other operating systems in a vehicle are not considered containers. Thus, there is no need to label LP cylinders used to fuel lift trucks, but spare LP cylinders in storage must be labeled. The hazards of fuel in vehicles must be assessed, including the hazards of byproducts. (P. A-8)

Very small containers may be tagged instead of labeled.
(P. A-8)

The term "employee" excludes office workers who occasionally change toner in a photocopier, but it includes employees who operate photocopiers on a full-time basis.
(P. A-9) It also covers employees in a graphic arts department exposed to hazardous chemicals. (P. A-2)

Paragraph (d). Hazard Determination

See comments under paragraph (b)(2).

Paragraph (e)(1). Written Hazard Communication Program

Written programs must be developed by every employer whose employees may be exposed to hazardous chemicals, even if the hazard is generated by other employers (e.g., on-site contractors). (P. A-13)

The program must address hazardous chemicals to which exposure occurs only during repair or demolition (e.g., silica in concrete sidewalks released by jackhammers). (Pp. 7, A-2)

An employer must include in the program information regarding the hazards of a purchased product if the information does not come from the manufacturer (and hence is not reflected on the manufacturer's MSDS). (P. A-10)

Paragraph (e)(2). Multi-Employer Work Sites

A "multi-employer work site" is an establishment where employees of more than one employer are performing work and are exposed to hazardous chemicals. The term includes plant sites where on-site contractors are present. (Pp. A-13, A-14)

At multi-employer worksites, MSDSs may be kept in one location if all employers know that location (e.g., at construction sites, in the general contractor's trailer). (P. A-14)

Paragraph (f). Labels

A label need not include all hazards identified on the MSDS. For example, for a product containing ethanol not intended for ingestion, the MSDS must indicate that IARC has found ingestion of ethanol in alcoholic beverages to be carcinogenic, but the product's label could omit the cancer warning (at least where ingestion is an unlikely route of exposure). (P. A-21).

Manufacturers may not exclude hazards from labels because of presumed low levels of downstream exposure. (Pp. A-21, A-22). This is an affirmation of the court's decision in General Carbon.

Target organ effects must appear on labels for shipped containers. (Pp. A-19, A-20). They must also appear on labels for in-plant containers unless a labeling system (such as NFPA, ANSI, or HMIS) is used and target organ effects are addressed in the written hazard communication program. (Pp. A-18, A-19)

NOTE

Shipped containers of hazardous chemicals must be labeled with all required information, including target organ effects information. This requirement applies even if the hazardous chemicals are shipped intrastate, to another establishment of the same company, or for export. (P. A-22)

Labels must accompany shipments by tank car, rail car, or other vehicle, and may not be mailed separately from the container. OSHA claims protection of workers engaged in transportation as the reason, although DOT regulations may preempt the HCS in transportation. DOT's emergency response communication standards became effective December 31, 1990. See 55 Fed. Reg. 33707 (Aug. 17, 1990). (P. A-22)

Like MSDSs, labels must be updated within three months of receipt of new information. (Pp. A-22, A-23)

MSDSs are not an acceptable alternative to labeling stationary process vessels under paragraph (f)(6). (P. A-23)

Labeling in accordance with the requirements of substance-specific standards (e.g., EO, which requires label warnings for cancer and reproductive hazards, but not for acute or physical hazards) is sufficient to meet the HCS health effects labeling requirement, but warnings for physical hazards may also be necessary. (P. A-24)

Label warnings for carcinogenicity are required for: OSHA carcinogens; NTP carcinogens; IARC Group 1 and 2A carcinogens; and chemicals for which there is at least one positive animal study and some human evidence of carcinogenicity. In addition, chemicals with multiple positive animal studies may need label warnings for carcinogenicity, depending upon the weight of the evidence. (P. A-27)

The OSHA carcinogens in substance-specific standards are identified on pp. 24-25. The Instruction is ambiguous as to whether chemicals in the Z-tables of 29 C.F.R. § 1910.1000 whose PELs were based on avoidance of cancer are OSHA carcinogens for purposes of the HCS labeling requirements. (P. A-25). These include acrylamide, amitrole, asphalt fumes,

beryllium and its compounds, carbon tetrachloride, chloroform, chromic acid and chromates, chromyl chloride, dimethyl sulfate, 2-nitropropane, perchloroethylene, o-toluidine, p-toluidine, vinyl bromide, vinyl cyclohexene dioxide (Union Carbide Cycloaliphatic Resin ERL-4206, a UCC animal carcinogen), and zinc chromates. Guidance obtained from Alan McMillan (then acting head of OSHA) and Jennifer Silk indicates that these chemicals are not considered OSHA carcinogens for purposes of the HCS. However, some of them are NTP or IARC carcinogens, and others may be subject to the HCS labeling requirements depending upon the weight of the evidence, and thus must have cancer warnings on the label. The Alan McMillan guidance noted particularly that perchloroethylene, while neither an NTP, IARC, nor OSHA carcinogen, should be labeled as a carcinogen due to the weight of the evidence.

Findings that an occupation is at increased risk of carcinogenicity, without identification of specific causative agents (e.g., painters), do not trigger label or MSDS requirements. (P. A-26)

As provided under the vinyl chloride standard, 29 C.F.R. § 1910.1017, polyvinyl chloride resin must be labeled as a carcinogen, but final molded and extruded products do not need to be. (P. A-27).

Paragraph (g). MSDSs

MSDS requirements apply to samples sent by manufacturers, regardless of whether the samples are sold, since the hazards remain the same regardless of whether the customer pays for the sample. (P. A-28)

MSDSs for non-hazardous chemicals may note that the product "is not considered to be or to contain hazardous chemicals based on evaluations made by our company under the [HCS]". (P. A-28)

MSDSs may not overwarn concerning recommended protective measures (e.g., recommending supplied air suits for products of relatively low toxicity). (Pp. A-28, A-29)

Old pipes sold to scrap dealers need MSDSs if the pipes contain residues of hazardous chemicals. (P. A-29)

MSDSs must be in English, but may also be translated into other languages. (P. A-29)

An MSDS for a mixture may consist of the MSDSs for the components if physically attached to each other and if identified so as to be able to be cross-referenced to the label. (P. A-30)

Where the physical characteristics of a mixture have not been objectively determined, the MSDS may present data on the components in ranges (e.g., "flash points range from 70 to 100 degrees fahrenheit").

TDI must be disclosed on the MSDS even if present at less than 1% because it is a sensitizer in very small concentrations. (P. A-30)

It is not necessary to state that a chemical is not a carcinogen unless the MSDS form provides a space for a carcinogen entry. (P. A-30)

Computer-generated MSDSs do not have to include fields which do not apply. (P. A-31)

The revised or new PELs of 29 C.F.R. § 1910.1000 adopted in 1989 must appear on MSDSs. (Pp. A-31, A-32)

MSDSs may be maintained on-site by the use of computers with printers, microfiche machines, and/or fax machines, so long as employees have no barriers to access to the information and the MSDSs are available during the work shift. It is not sufficient to provide the information orally by telephone. It is acceptable to use terminals in plant and train key employees to access them so long as the information can be obtained during any work shift. Similarly, the use of fax machines to obtain MSDSs is acceptable so long as the system is reliable and MSDSs are readily accessible while employees are in their work areas during all work shifts. (Pp. A-32 through A-34)

Paragraph (h), Training

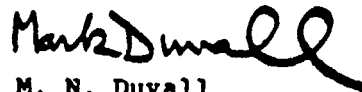
An employer's training requirements are triggered if another employer brings on-site hazardous chemicals to which employees of the first employer may be exposed where those employees have not previously been trained concerning those hazards. (P. A-35)

Training must cover emergency procedures. The HCS training requirements on emergency procedures may overlap those of HAZWOPER, 29 C.F.R. § 1910.120, depending upon what employees should do in the event of an emergency. If the employees should simply leave the area, training for emergencies would be limited, but would include information on emergency alarms, evacuation routes, and evacuation areas, as applicable. Where employees should help moderate or control the impact of the emergency, more training would be required. It would include at least leak and spill cleanup procedures, shut-down procedures, recognizing and reporting unusual circumstances, and evacuations. (Pp. A-35, A-36)

The HCS training requirements may also overlap the general construction industry training requirements, 29 C.F.R. § 1926.21. (P. 23)

Training must be comprehensible. In appropriate cases, it may need to be conducted in languages other than English. (P. A-36)

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Duvall", with a stylized flourish at the end.

M. N. Duvall

MND:nnn
Attachment

U.S. Department of Labor

Assistant Secretary for
Occupational Safety and Health
Washington, DC 20210



OSHA Instruction CPL 2-2.38C

OCT 22 1990

Office of Health Compliance Assistance

Subject: Inspection Procedures for the Hazard Communication
Standard, 29 CFR 1910.1200, 1915.99, 1917.28
1918.90, 1926.59, and 1928.21

- A. Purpose. This instruction establishes policies and provides clarifications to ensure uniform enforcement of the Hazard Communication Standard (HCS).
- B. Scope. This instruction applies OSHA-wide.
- C. References.
1. OSHA Instruction CPL 2.45B, June 15, 1989, the Revised Field Operations Manual (FOM).
 2. OSHA Instruction STP 2-1.117, August 31, 1984.
 3. Voluntary Training Guidelines, Vol. 49, FR 30290, July 27, 1984.
 4. 29 CFR 1910.20, Access to Employee Exposure and Medical Records.
 5. 29 CFR 1910.1047, Ethylene Oxide.
 6. 29 CFR 1910.1000, Air Contaminants, Vol. 54, FR 2332, January 19, 1989.
 7. The HCS was recodified and referenced as 29 CFR 1910.1200 for General Industry, 1915.99 for Shipyard Employment, 1917.28 for Marine Terminals, 1918.90 for Longshoring, 1926.59 for Construction and 1928.21 for Agriculture. For convenience this instruction will reference only applicable paragraphs. The appropriate sections of the CFR shall be referenced for citation purposes when inspections are performed in those respective industries.
- D. Cancellation. OSHA Instruction CPL 2-2.38B, August 15, 1988, is canceled.
- E. Action. OSHA Regional Administrators and Area Directors shall use the guidelines in this instruction to ensure uniform enforcement of the HCS. The Directorate of Compliance Programs will provide support as necessary to assist the Regional Administrators and Area Directors in enforcing the HCS.

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F. Federal Program Change. This instruction describes a Federal Program change which affects State programs. Each Regional Administrator shall:

1. Ensure that this change is forwarded to each State designee.
2. Explain the technical content of the change to the State designee as requested.
3. Advise the State designees that as a result of further court actions, all provisions of the Federal MCS are now in effect in all segments of industry. The compliance date for programmed inspections in the construction industry and the three previously disapproved provisions was extended to March 17, 1989. States not already enforcing in all industries were expected to have done so by that date.
4. Ensure that State designees are asked to acknowledge receipt of this Federal program change in writing to the Regional Administrator as soon as the State's intention is known, but not later than 70 calendar days after the date of issuance (10 days for mailing and 60 days for response). This acknowledgment must include the State's intention to follow OSHA's policies and procedures described in this instruction, or a description of the State's alternative policy and/or procedure which is "at least as effective" as the Federal policy and/or procedure or of the reasons why the change should not apply to that State.
5. Ensure that the State designees submit a plan supplement, in accordance with OSHA Instruction STP 2.22A, Ch-3, as appropriate, following the established schedule that is agreed upon by the State and Regional Administrator to submit non-Field Operations Manual/Technical Manual Federal Program Changes.
 - a. If a State intends to follow the revised inspection procedures described in this instruction, the State must submit either a revised version of this instruction, adapted as appropriate to reference State law, regulations and administrative structure, or a cover sheet describing how references in this instruction

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correspond to the State's structure. The State's acknowledgment letter may fulfill the plan supplement requirement if the appropriate documentation is provided.

- b. If the State adopts an alternative to Federal enforcement inspection procedures, the State's plan supplement must identify and provide a rationale for all substantial differences from Federal procedures in order for OSHA to judge whether a different State procedure is as effective as a comparable procedure. An alternative enforcement policy would presumably be necessary in a State with a right-to-know law or a different hazard communication standard.
 - c. Any State which has a right-to-know law shall also document in the plan supplement how enforcement of the right-to-know law substitutes for, relates to, or interfaces with the hazard communication standard, and how the State maintains separation of any public/community right-to-know enforcement activities from its approved State plan workplace operations.
- 6. After Regional review of the State plan supplement and resolution of any comments thereon, forward the State submission to the National Office in accordance with established procedures. The Regional Administrator shall provide a judgment on the relative effectiveness of each substantial difference in the State plan change and an overall assessment thereon with a recommendation for approval or disapproval by the Assistant Secretary.
 - 7. Review policies, instructions and guidelines issued by the State to determine that this change has been communicated to State personnel.
- G. Special Identifiers. The sections of this instruction which are marked with an asterisk (*) have particular relevance to construction employers.
 - H. Background. A final Hazard Communication Standard (HCS), 29 CFR 1910.1200, covering the manufacturing sector, Standard Industrial Classification Codes (SIC) 20-39, was published in the Federal Register on November 25,

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1983 (48 FR 53280). As a result of a court challenge, OSHA was ordered by the U.S. Court of Appeals for the Third Circuit to expand the scope of the standard without further rulemaking.

1. On August 24, 1987, a final rule covering all employers was published in the Federal Register. Due to subsequent court and administrative actions, OSHA was prevented from enforcing the rule in the construction industry and from enforcing in all industries three requirements dealing with providing and maintaining material safety data sheets (MSDSs) on multi-employer worksites, coverage of consumer products, and the coverage of drugs in the nonmanufacturing sector.
 2. As a result of the February 21, 1990, Supreme Court decision (see Dole, Secretary of Labor, et. al., v. United Steelworkers of America et. al., No. 88-1434), all provisions of the rule are now in effect for all industrial segments, including the three previously stayed provisions mentioned above. OSHA extended the compliance date until March 17, 1989, for programmed inspections in the construction industry.
- I. Organization of this Instruction. Compliance guidelines are addressed within the main part of this instruction. Clarifications, interpretations, review aids and other information are provided in Appendices A through D. This format will permit easier updating and additions, as enforcement experience provides more information regarding these areas.
1. Appendix A of this instruction provides clarifications of provisions of the standard where significant interpretations have been necessary to ensure uniform enforcement and understanding.
 2. Appendix B provides a sample letter for inquiries regarding missing or deficient MSDS and labels.
 3. Appendix C provides general guidelines for evaluation of hazards.
 4. Appendix D provides a guide for reviewing MSDS.

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- J. Inspection Resources. Compliance safety and health officers (CSHOs) shall evaluate employer compliance with the HCS during the course of all inspections. (See the FOM, Chapter III, D.7.a.2.)
1. Both safety and health CSHOs shall evaluate employer compliance with the written program requirements, use of labels, availability of MSDS and appropriate training.
 2. CSHOs of one discipline shall consult with those of the other when specific expertise is necessary to evaluate elements of the employer's program.
- K. Inspection Guidelines. The following guidelines apply to all inspections conducted to determine compliance with the HCS:
1. Inspection Guidance. The HCS incorporates both specification and performance requirements which are result-oriented, thereby providing goals for achievement and allowing employers the flexibility to develop a program suitable for their particular facility. In evaluating compliance with the rule, CSHOs should always consider whether the intent of the provisions have been met. CSHOs must exercise a high level of professional judgment during compliance inspections. The standard itself, and the preamble accompanying it, are to be consulted for further guidance.
 2. Special Documentation. In addition to those items required by the FOM, Chapter IV, C. 8. as applicable, when citations are recommended, the CSHO shall document the following on the OSHA-1B or, as appropriate, elsewhere in the case file:
 - a. Name of the chemical(s).
 - b. Name of the person preparing the hazard determination, written program, label, MSDS, etc. and for whom they work.
 - c. CSHOs shall ensure that the number of employees who may be exposed (including potential exposure) to the chemical in the establishment is documented.

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- d. If a chemical manufacturer, importer, or distributor is inspected, indicate the name of a downstream employer who receives the chemical, including company name, address, and potential or actual downstream employee exposure.
 - e. Health and physical hazards.
 - f. If practical, include a photocopy or a photograph of inaccurate and/or any incomplete label(s)/MSDS in the case file. Otherwise document the specific deficiency in the case file. If the volume of inaccurate/incomplete MSDS cannot reasonably be included in the file, then a representative number should be documented, indexing those referenced in the citation.
3. Scope and Application - Paragraph (b). The HCS requires labels and MSDS to be transmitted from chemical manufacturers and importers to distributors to employers to employees. No barrier to this information flow is permitted.
- a. This paragraph outlines exemptions to full coverage of the standard. A complete exemption from all requirements of the HCS applies for only those items listed under (b)(6) and should not be confused with the labeling exemptions at (b)(5) which only apply when chemicals are subject to the labeling requirements of certain Federal agencies.
 - b. Laboratories and sealed containers are dealt with in a limited fashion as per paragraphs (b)(3) and (b)(4).
 - c. Inspection Guidelines. As explained in H.2. of this instruction, the HCS has been fully enforceable in all SIC's since March 17, 1989. *
- (1) The Scope and Application paragraph (b) of the HCS requires "all employers to provide information to their employees about the hazardous chemicals to which they are exposed, by means of a hazard communication

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program, labels and other forms of warning, material safety data sheets and information and training." (Emphasis added.)

- (2) The expansion of the standard to all industries via the August 24, 1987, final rule obligates all employers to comply with the provisions of the HCS. Employers must provide their employees with information on hazardous substances which are known to be present at the worksite.
 - (3) The scope paragraph clearly states that the HCS applies to employers if they know hazardous chemicals are present in a manner that employees may be exposed, regardless of whether the employer has created the chemical exposure. The multi-employer worksite provisions of paragraph (e)(2) ensure that employers are able to obtain the information they need to be able to meet these obligations.
 - (4) In some cases, a hazardous chemical may be present for a long period of time without an employee exposure until repair or demolition activities are performed. By way of example, employers involved in work operations where jackhammers are being used to break up a sidewalk know that they are exposing their employees to a hazardous chemical (silica), even though they did not "bring" the hazard to the site. Even though other provisions of the standard may not be enforceable (MSDS and labels), the employer should still develop a hazard communication program to inform their employees "about the hazardous chemicals to which they are exposed." Employers may utilize their already existing hazard communication program to communicate information on these types of hazards to their employees, as per paragraph (e)(3).
4. Hazard Determination - Paragraph (d). Only chemical manufacturers and importers are required to perform hazard determinations on all chemicals they produce or

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import, although distributors and employers may choose to do so. Hazard determination procedures must be in writing and made available, upon request, to employees, the National Institute for Occupational Safety and Health (NIOSH), and OSHA. Appendix C is provided as a guide for use when assessing the hazard evaluation procedures.

- a. Inspection Guidelines. The adequacy of a company's hazard determination program can be assessed primarily by examining (or reviewing) the outcome of that determination; i.e., the accuracy and adequacy of the information on labels and MSDS. The written hazard evaluation procedures generally describe the process followed; they do not have to address each chemical evaluated. The chemical manufacturer, importer, employer or distributor performing the hazard determination ("the preparer"), shall be asked to forward the written hazard determination procedures to the Area Director when they are not immediately available at the establishment. A reasonable time period, not exceeding 5 working days, shall be allowed for receipt in the Area Office.
 - (1) Although not required, many companies will keep records of individual chemical evaluations. In the event of a finding by the CSHO of an inaccurate determination, as indicated by inaccurate information on the MSDS or label, these records may be useful in identifying where the company's evaluation differed from OSHA's, and for documentation of appropriate violations.
 - (2) In general, the hazard evaluation procedures should address the following:
 - (a) The sources of information to be consulted. Evaluators should have access to a wide range of sources. While well-known chemicals could be adequately evaluated by consulting established reference texts, others will require searches of bibliographic data bases.

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- (b) Criteria to be used to evaluate the studies, including those parameters addressed by the HCS (i.e., statistical significance; whether or not the evaluation was conducted according to established scientific principles).
 - (c) A plan for reviewing information to update the MSDS if new and significant health information is found.
- (3) The hazard evaluation must include an assessment of both physical and health hazards. The chemical manufacturer or importer must consider the potential exposures that may occur when downstream employers use the product, and address the hazards that may result from that use on the labels and MSDS prepared for the product. It is important to note that employee "exposure" as defined by the HCS includes any route of entry (inhalation, ingestion, skin contact or absorption) and also includes potential (e.g., accidental or possible) exposure, including foreseeable emergencies. Only by considering all these factors can the chemical manufacturer or importer truly assess the hazards encountered during anticipated use of his product. The mere presence of a chemical in a product does not necessarily result in coverage; it must be available for exposure.
- (4) Evaluations with respect to carcinogen labeling and MSDS notations are addressed in those respective sections below as well as in Appendix A which also contains specific information on mineral oils.
- b. Citation Guidelines. Citations for violations of paragraph (d)(1) shall be issued when the preparer has failed to perform a hazard determination. Paragraphs (d)(2), (d)(3) and (d)(4) of the standard shall be used, as appropriate.

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- (1) If the preparer has developed MSDS but does not have the written procedures available that were used to determine the hazards of the chemical(s), then a violation of paragraph (d)(6) exists and shall be recommended for citation.
 - (2) If the preparer has not developed an MSDS and no written procedures are available, then apparent violations of both paragraphs (d)(1) and (d)(6) exist and shall be recommended for citation. (Refer to K.7.b. of this instruction for guidance.)
 - (3) Chemical manufacturers or importers are not required to test their products to evaluate their hazards. If a mixture has been tested, the resulting data would apply. If it has not been tested as a whole, the mixture is assumed to present the same hazards as its component parts. If the employer chooses to rely on upstream chemical manufacturers' hazard determinations for the component parts of his mixture, he may do so but must so specify in his written hazard determination procedures. MSDS for each of the component parts must be physically grouped together in order to meet the chemical manufacturer's hazard determination requirements. Certain information has to be provided for the mixture as a whole for the combined MSDS; e.g., identity, manufacturer's name, address, etc.
5. Written Hazard Communication Program, Paragraph (e). * CSHOs shall review the employer's written hazard communication program to determine if all applicable requirements of paragraph (e) have been addressed. The HCS obligates all employers who may expose their employees to hazardous chemicals to develop a written program, regardless of whether or not they introduced the hazard into the workplace.
- a. Inspection Guidelines. Ideally, and if readily available, the written program should be reviewed first, prior to ascertaining whether the elements

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of the program have been implemented in the workplace.

- (1) The CSHO shall determine whether or not the employer has addressed the issues in sufficient detail to ensure that a comprehensive approach to hazard communication has been developed.

- (2) In general, the written program should consider the following elements where applicable:

(a) Labels and Other Forms of Warning.

- 1 Designation of person(s) responsible for ensuring labeling of in-plant containers.
- 2 Designation of person(s) responsible for ensuring labeling on shipped containers.
- 3 Description of labeling system(s) used.
- 4 Description of written alternatives to labeling of in-plant containers, where applicable.
- 5 Procedures to review and update label information when necessary.

(b) Material Safety Data Sheets.

- 1 Designation of person(s) responsible for obtaining/maintaining the MSDS.
- 2 How such sheets are to be maintained (e.g., in notebooks in the work area(s), via a computer terminal, in a pick-up truck at the jobsite, via telefax) and how employees obtain access to them.

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- 1 Procedure to follow when the MSDS is not received at the time of the first shipment.
- 4 For chemical manufacturers or importers, procedures for updating the MSDS when new and significant health information is found.

(c) Training.

- 1 Designation of person(s) responsible for conducting training.
- 2 Format of the program to be used (audiovisuals, classroom instruction, etc.).
- 3 Elements of the training program--compare to the elements required by the HCS (paragraph (h)).
- 4 Procedures to train new employees at the time of their initial assignment and to train employees when a new hazard is introduced into the workplace.
- 5 Procedures to train employees of new hazards they may be exposed to when working on or near another employer's worksite (i.e., hazards introduced by other employees).
- 6 Guidelines on training programs prepared by the Office of Training and Education entitled "Voluntary Training Guidelines" (Vol. 49 FR 30290, July 27, 1984) can be used to provide general information on what constitutes a good training program.

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(d) Additional Topics To Be Reviewed.

- 1 Does a list of the hazardous chemicals exist and if so, is it compiled for each work area or for the entire worksite and kept in a central location?
- 2 Are methods the employer will use to inform employees of the hazards of non-routine tasks outlined?
- 3 Are employees informed of the hazards associated with chemicals contained in unlabeled pipes in their work areas?
- 4 Does the plan include the methods the employer will use at multi-employer worksites to inform other employers of any precautionary measures that need to be taken to protect their employees?
- 5 For multi-employer workplaces, are the methods the employer will use to inform the other employer(s) of the labeling system used described?
- 6 Is the written program made available to employees and their designated representatives?

- b. Citation Guidelines. Generally, all violations of paragraph (e) shall be grouped with the violated element(s) listed in the subparagraphs of (e) and/or violations of paragraphs (f), (g) and (h) as appropriate, since (e)(1) is the only provision under paragraph (e) which addresses the development, implementation and maintenance of the written hazard communication program. Specific citation guidance is given below:

- (1) Paragraph (e)(1) shall be cited by itself when no program exists (i.e., when no program has been developed). Paragraph (e)(1) shall

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also be cited in instances where the written program is not maintained at a fixed worksite location. For certain mobile or multi-employer worksite situations, see guidance given in Appendix A, Section (e)(2), discussion beginning on page A-15.

- (2) When an employer's written program exists but is found to be deficient (i.e., has not been implemented as witnessed by the inadequacies of the other requirements of the standard), paragraph (e)(1) shall be cited and grouped as separate violations with separate penalties with the elements of the standard required in subparagraphs of (e) and/or paragraphs of (f), (g), and/or (h). An example follows: An employer has developed a written program but it has not been implemented in the workplace--no training has been provided and MSDSs are not available to employees. In this situation two separate violation items shall be recommended for citation: (e)(1) grouped with (h) as a separate violation and penalty and (e)(1) grouped with (g)(8) as a second violation with separate appropriate penalty.
- (3) Paragraph (e)(1) shall also be cited when an employer has not developed a written program and yet is exposing his employees to chemical hazards which are known to be present in the workplace and which are created by another employer.
- (4) OSHA's compliance and enforcement policies for multi-employer worksites are set forth in the FOM, Chapter V, Sections F.1 and 2., which state that with regard to working conditions where employees of more than one employer are exposed to a hazard, the employers "with the responsibility for creating and/or correcting the hazard" shall be cited for violations of OSHA standards that occur on a multi-employer worksite. In these situations, normally citations for violations shall be issued to each of the

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exposing employers as well as to the employer responsible for correcting or ensuring the correction of the condition (which is usually the controlling employer or general contractor).

6. Labels and Other Forms of Warning. Paragraph (f). *
Labels or other markings on each container of chemicals must include the identity and appropriate hazard warnings. Labels on shipped containers must also include the name and address of the chemical manufacturer, importer, or other responsible party.

a. Inspection Guidelines. CSHOs shall determine that containers are labeled, that the labels are legible, and that the labels are prominently displayed.

- (1) Labels must be in English. Labels and MSDS may also be printed in additional languages.
- (2) The accuracy of the label information is to be assessed for a representative number of chemicals. The CSHO shall determine whether the label identity can be cross-referenced with the MSDS and the list of hazardous chemicals.
- (3) CSHOs must consider alternate labeling provisions (for example tags or markings) for containers which are too small to accommodate a legible label.
- (4) CSHOs shall evaluate the effectiveness of in-plant labeling systems through a review of the employer's training program and MSDS procedures. Such evaluation shall include interviews with employees to determine their familiarity with the hazards associated with chemicals in their workplace. An effective program is one that ensures that employees are aware of the hazardous effects (including target organ effects) of the chemicals to which they are potentially exposed.

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- (5) Guidelines for referrals regarding inadequate labels are dealt with in this instruction at K.7.a.(7) and (8).

- b. Citation Guidelines. Chemical manufacturers shall be cited for appropriate paragraphs (f)(1)(i) through (f)(1)(iii) of the standard when deficiencies are found relating to products that are shipped downstream. Paragraphs (f)(5)(i) and (f)(5)(ii) of the standard shall be cited when a hazardous chemical is created and/or used only in-house. (See also K.7.b.)

- 7. Material Safety Data Sheets. Paragraph (g). The * standard requires chemical manufacturers and importers to develop or obtain a material safety data sheet for each hazardous chemical they produce or import.

- a. Inspection Guidelines. Distributors and employers may, at their option, develop MSDSs. CSHOs should inform them as well as chemical manufacturers and importers that the Material Safety Data Sheet, OSHA Form 174, is available for this purpose. The CSHO shall evaluate the compliance status of this provision by examining a sample of MSDSs to determine that the MSDSs has been obtained or developed and prepared in accordance with the requirements of paragraphs (g)(2)-(5) of the standard and to ensure that the information regarding the health and physical hazards is technically accurate. If MSDSs are not updated when new information becomes available, the hazard determination performed by the chemical manufacturer or importer is deficient.

- (1) The number of MSDSs and the particular MSDS selected for review will depend upon several factors, such as:
 - (a) The number of chemicals in the workplace.
 - (b) The severity of the hazards involved.
 - (c) The completeness of the MSDS in general.

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(d) The volume of the chemicals used.

- (2) The CSHO is to complete this review by following the procedures outlined in Hazard Evaluation Procedures, Appendix C of this instruction. The CSHO shall also use available literature and computer references in the Area Office as well as Appendix D, Guide to Reviewing MSDS Completeness, in reviewing MSDS.

NOTE: Published MSDS reference files are copyrighted, and, therefore, must NOT be copied for distribution to the public.

- (3) In addition, each Area Office has access to physical and health hazard data on the OSHA Computerized Information System (OCIS). If the hazard information is not available or cannot be obtained in the Area Office, then the Regional Office shall be consulted. If the Regional Office does not have information on the chemical in question, then the Regional Office shall contact the Technical Data Center.
- (4) Published MSDSs, if used, are a screening resource for the CSHO. The information on these MSDSs has not been evaluated by OSHA to determine if it is accurate or required in every situation. They should be used to help identify which areas require further research or where information is lacking on the MSDS being reviewed.
- (5) The following items shall be considered when reviewing the MSDSs:
- (a) Do employers have an MSDS for each hazardous chemical used?
 - (b) Does each MSDS contain information which adequately addresses at least the 12 elements required by the standard at (g) (2) (i)-(xii)?

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- (c) Are all sections of the MSDS accurately completed?
- (6) The CSHO shall ensure compliance with the MSDS transmission provisions of the standard by reviewing the chemical manufacturer's, importer's, or distributor's program for transmitting the MSDSs and updated MSDSs to downstream customers.
- (7) Referral Procedures Where an Employer's MSDS/Label is Inadequate or Deficient. Where employers are relying on the MSDS/label supplied by chemical manufacturers or importers, the following procedures apply:
 - (a) Employers are not to be held responsible for inaccurate information on the MSDS/label which they did not prepare and they have accepted in good faith from the chemical manufacturer, importer or distributor.
 - (b) The CSHO shall take copies of the MSDS/label with inaccurate information back to the Area Office for referral to the appropriate State Plan State or Area Office. Before making the referral, the Area Director shall write to the supplier requesting action in 30 days or less using the sample letter in Appendix B of this instruction. As an option, the Area Office may call the supplier, but if a prompt response is not received, a letter shall be sent. This may be done even if the supplier is outside the jurisdictional area of the Area Office.
 - (c) If the manufacturer or supplier fails to respond within a reasonable time, a referral (OSHA-90 Form), with complete background information attached, shall be sent to the State Plan State or Area Office within whose jurisdiction the supplier or manufacturer does business.

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- (d) The Area Office within whose jurisdiction the upstream supplier or manufacturer is located shall then ensure that an abbreviated (HCS) inspection is conducted or that a letter is written in accordance with the referral procedures in the FOM, Chapter IX, B.3.b.
- (e) The findings and the MSDS(s) and/or labels obtained shall be sent to the referring office.
- (f) The Regional Administrator shall coordinate with State designees to ensure that referrals from State plans are handled in similar manner. OSHA will not act on a referral from a State if it is for the purpose of obtaining an MSDS for inclusion in a State-maintained MSDS file and/or repository.

(8) Referral Procedures for Distributors. When a distributor has not received an MSDS from the supplier, the CSHO shall recommend that the distributor write to the chemical manufacturer, and, if applicable, other distributor who supplied the chemical. If at the end of the abatement period, the distributor has failed to receive the MSDS, the Area Director shall follow the referral procedures outlined in K.7.a.(7)(b) through (f) of this instruction.

b. Citation Guidelines. Citations shall be issued to the employer only when MSDS/labels are missing.

- (1) If MSDS/labels are missing or have not been received for a hazardous chemical(s), the employer shall be cited unless a good faith effort has been made to obtain the information.
 - (a) A copy of a letter or documentation of a phone call to the supplier are examples of methods for establishing a good faith

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effort. An employer contacting OSHA for assistance in obtaining the missing information is also an excellent example of a good faith effort.

- (b) Area Offices should expect to receive requests from employers to assist them in obtaining MSDSs or labels in situations when an inspection has not been conducted. If the Area Director determines that the employer has tried to obtain the information, and has not been able to do so, a letter and/or telephone call from the Area Office to the supplier or manufacturer is the appropriate action in this situation as well.
- (c) If a citation will be issued to the employer for lack of a MSDS/label, where the employer has failed to document that a good faith effort has been made to obtain them, CSHOs shall recommend that the employer write to both the direct supplier and to the manufacturer for the MSDS or label.
 - 1 CSHOs shall inform employers that it is their responsibility to contact OSHA before the expiration of the abatement date to request a petition to modify abatement or else be subject to a failure to abate if abatement is not accomplished. If at the end of the abatement period the employer still has failed to receive the requested information, the Area Director shall call and/or send a certified letter to the manufacturer, importer, or distributor to obtain the required information. (See sample letter in Appendix B.)
 - 2 If the distributor failed to transmit the MSDS to the employer,

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the distributor shall be cited for violation of paragraph (g)(7) of the standard with a short abatement date unless the distributor did not receive the MSDS from the chemical manufacturer, importer, or distributor. In such cases the abatement period will generally be 30 days.

- (2) Any party who changes the label/MSDS (for example, changing the name or identity of the chemical) then becomes the responsible party for the change regardless of whether they are a chemical manufacturer, distributor or user employer. In cases where a distributor adds its name to the MSDS and those MSDSs are inaccurate or incomplete, citations shall not be issued to the distributor. Distributors, however, who substitute their names on the MSDS or change it in any way become the "responsible party" and must be able to supply the required additional information on the hazardous chemical and appropriate emergency procedures, if necessary. Failure to be able to provide the additional information will result in a violation of (g)(2)(xii) of the standard if noted upon inspection.
- (3) On multi-employer worksites, citations for violations of (g)(8) of the standard shall be issued to the employer responsible for providing or making the MSDS(s) available, as discussed below. A citation for violation of (e)(2) of the standard shall concurrently be issued in any of the instances listed where there is evidence that an employer has failed to effectively implement and enforce its hazard communication program.
 - (a) If an employer on a multi-employer worksite brings hazardous chemicals onto that site and fails to inform other employers about the presence of those chemicals and/or the availability of the

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MSDS(s), that employer shall be cited for violation of (g)(8) grouped with (e)(2).

(b) Central Location. If the employer's method to provide other employers with MSDS(s) involves the use of a central location, and the MSDS(s) is not available at that location, then the employer shall be cited for violation of (g)(8).

(c) Controlling Employer. If the employer's method involves using a general contractor or other employer as an intermediary for storage of the MSDS(s), and that intermediary employer has agreed to hold and provide ready access to the MSDS(s), then that other employer becomes the controlling employer, who is then responsible for ensuring the availability of the MSDS(s).

1 The controlling employer (e.g., general contractor) shall therefore normally be cited for violation of (g)(8) if the MSDS(s) is not available; however:

2 If the MSDS(s) is not available because the subcontractor failed to provide it, then the subcontractor shall instead be cited for violation of (g)(8).

(4) The FOM discusses penalty factors for shipped containers at Chapter IV, Section C.8.

8. Employee Information and Training, Paragraph (h). *

a. Inspection Guidelines. The training requirements of the HCS will generally complement rather than satisfy the existing training requirements contained within other OSHA standards (i.e., expanded health standards, construction requirements, etc.).

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- (1) CSHOs shall continue to ensure that employers' obligations under specific training provisions of other standards are met. There will also be instances where there is an overlap in the training requirements of 29 CFR 1926.21, Safety Training and Education, and the HCS. In those instances where the training deficiency is covered by both standards (1926.21 and 1926.59) the CSHO shall issue a citation for 29 CFR 1926.59, which is the more specific standard.
- (2) Training programs must be evaluated through program review and discussion with management and employees. All elements of training and information stated in the standard must be addressed. The following additional questions provide a general outline of topics to be reviewed:
 - (a) Has a training and information program been established for employees exposed to hazardous chemicals?
 - (b) Is this training provided at the time of initial assignment and whenever a new hazard is introduced into work areas?
 - (c) Have all new employees at this location received training equivalent to the required initial assignment training?
 - (d) Was training subject matter organized by:
 - 1 Specific chemical?
 - 2 Categories of hazard?
- (3) The Voluntary Training Guidelines (Vol. 49 FR 30290, July 27, 1984) may also be helpful in assessing the effectiveness of the employer's training program.

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- (4) Employee interviews will provide general information to the CSHO regarding the training program. Obviously, it cannot be expected that employees will totally recall all information and be able to repeat it. Employees must be aware of what hazards they are exposed to, know how to obtain and use information on labels and MSDS, and know and follow appropriate work practices. However, if the CSHO detects a trend in employee responses that indicates training is not being conducted, or is conducted in a cursory fashion that does not meet the intent of the standard, a closer review of the written program and its implementation may be necessary. The purpose of the standard is to reduce chemical source illnesses and injuries through the transmission hazard information. This can occur only if employees receive the information in usable form through appropriate training.
- (5) Paragraph (h) requires that information and training be provided to employees regarding the hazards of all chemicals in their work areas including by-products and hazardous chemicals introduced by another employer, provided that they are known to be present in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.
- (6) Some employers will voluntarily keep records of training sessions. These could be helpful to CSHOs in assessing compliance with the standard.
- (7) Employers are required to ensure that training is provided. Employees may be trained by unions, in trade schools, etc. The employer is responsible for ensuring they have been properly trained. If outside training sessions are used to satisfy this requirement, and the CSHO determines that the employee has not been adequately trained, the employer is subject to citation.

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- b. Citation Guidelines. Citations shall be issued under paragraph (h) of the standard when training is found to be inadequate through program review, discussion with management and employee interviews. The employer is always ultimately responsible for ensuring that employees are adequately trained, regardless of the method relied upon to comply with the training requirements.
9. Trade Secrets, Paragraph (i). Only specific chemical identities may be withheld under the HCS trade secret provisions. Even when a chemical's identity is rightfully withheld as a trade secret, its release may be required by the trade secret access provisions in paragraph (i).
- a. Inspection Guidelines. CSHOs evaluating the MSDS and hazard determination programs may request disclosure of trade secret identities under paragraph (i)(12) of the HCS. OSHA shall take all steps feasible to protect trade secret identities, including secure filing and return of information when its use is complete.
 - b. Citation Guidelines. Where OSHA believes that the chemical manufacturer, importer or employer will not be able to support the trade secret claim, the withholding of a specific chemical identity shall be cited as a violation of paragraph (g)(2). Where OSHA does not question the claim that a specific chemical identity is a trade secret, but the employer has failed to comply with paragraph (i)(1)(i), (ii), (iii) or (iv), or with (i)(2) or (3), such failure shall be grouped with 1910.1200 (g)(2), stating the deficiency in the AVD. For example, the employer claims a trade secret exists but failed to indicate on the MSDS that the specific chemical was being withheld for that reason, as required under paragraph (i)(1)(iii).
10. Response to Medical Emergencies. The HCS permits a treating physician or nurse to designate the existence of a medical emergency requiring the immediate disclosure of trade secrets.

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- a. Inspection Guidelines. Referrals received from treating physicians and nurses relating to a medical emergency shall normally be classified as imminent danger or serious in accordance with the FOM, Chapter IX. Due to the potential risk to life and/or health, the Area Director shall ensure that these referrals are processed as soon as received. The Area Director or his/her designee shall contact the manufacturer of the chemical by telephone. Telephone numbers are required on the MSDS. The manufacturer shall be informed of the standard's requirements and requested to immediately provide the needed information directly to the treating physician or nurse.
 - b. Citation Guidelines. Failure to disclose the information shall result in the issuance of a willful citation. The chemical manufacturer will frequently be located under a different Area Office jurisdiction. Apparent violations shall be referred to the office of jurisdiction for investigation and the issuance of citations. Concurrently, the Area Director of jurisdiction shall coordinate obtaining an administrative subpoena ordering the immediate disclosure of the needed information. Federal Court Orders shall be sought immediately if the administrative subpoena is not effective in obtaining the information.
11. Response to Nonemergency Referrals. When health professionals providing medical or other occupational health services to exposed employees, or when employees themselves and/or their designated representatives are denied access to trade secret information, the matter may be referred to OSHA for enforcement proceedings.
- a. As stipulated in the standard, OSHA should receive from the referring health professional, employee, or designated representative a copy of the written request for the trade secret information, as well as a copy of the written denial provided by the holder of the trade secret. These two written documents shall be reviewed by the Area Director

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to determine the validity of the request and the trade secret claim. The Regional Solicitor will provide assistance in this regard.

- b. If the Area Director does not believe that there is enough information upon which to base a decision, he/she may contact either the trade secret requester or the trade secret holder for further information. Such requests shall be documented in the case file.

L. Classification and Grouping of Violations. The procedures in the FOM, Chapters IV, C.8., and V, C., shall be followed except as modified by this instruction; however, if deviations appear appropriate, they shall be coordinated with the Directorate of Compliance Programs, Office of Health Compliance Assistance, through the Regional Office. The following guidelines normally shall apply:

1. Citations for violations of paragraphs (e), (f), (g) and (h) of the standard shall be issued as separate items when there is a complete lack of a hazard communication program. Otherwise the guidance provided in the FOM or specific guidance in this instruction shall be followed.
2. Serious violations shall be issued whenever a deficiency in the program can contribute to a potential exposure capable of causing death or serious physical harm. In addition, the CSHO must document that the employer knew or should have known of the violation.
 - a. Serious violations should be considered only when there is documentation which demonstrates that the employer or downstream employer is using the chemical in a manner which could result in actual or potential exposure capable of producing death or serious physical harm. The lack of a label or the lack of a training program alone for a specific chemical or type of hazard could result in a situation where exposure to that hazardous chemical without these safeguards of the HCS would create a serious hazard.

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- b. Documentation of a HCS violation for a chemical manufacturer or importer could be in the form of a referral generated as a result of OSHA's observation of conditions of use resulting in employee exposure to the hazardous chemical at a downstream user's workplace.
- 3. Willful violations should be considered in accordance with the guidelines of the FOM; i.e., the employer committed an intentional and knowing violation of the Act.
 - a. The employer was aware that a hazardous condition existed and did not make a reasonable effort to eliminate the condition, and
 - b. The employer was aware that the condition violated a standard and was aware of the standard.
 - c. In addition, willful citations shall be issued when an employer refuses to provide specific chemical identity information in a medical emergency (29 CFR 1910.1200(1)(2)).
- M. Interface With Other Standards. In some cases, an employer's duties under other OSHA standards dovetail with requirements of the HCS, resulting in simplified compliance.*
- 1. Medical Records Access. The Access to Employee Exposure and Medical Records standard (29 CFR 1910.20) and the HCS overlap with regard to MSDSs. MSDSs are specifically identified as exposure records under 29 CFR 1910.20(c)(5)(iii). Each the MSDS received by an employer must be maintained for at least 30 years as required at 1910.20(d)(1)(ii). The access standard does offer an alternative to keeping the MSDSs at 1910.20(d)(1)(ii)(B), which reads as follows:

Material safety data sheets and paragraph (c)(5)(iv) records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty (30) years.

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Therefore, an employer may discard the original data sheet and retain only the new data sheet if a record of the original formulation is maintained.

- a. Paragraph (e)(1)(i) of the HCS requires that employers maintain a list of hazardous chemicals as part of the written hazard communication.
 - b. Employers might simplify their responsibilities as they relate to the overlap between these two standards by incorporating the requirements under 1910.20(d)(1)(ii)(B) with those for the HCS paragraph (e)(1)(i). That is, the list of hazardous chemicals could include information on where chemicals were used and when they were used. These lists would then have to be kept for at least 30 years.
 - c. Section (e)(4) of the HCS requires employers to make the written hazard communication program available upon request to employees, their representatives, OSHA or NIOSH, in accordance with the requirements at 1910.20 (e). The standard, 1910.20 (e), requires the employer to provide a copy of the requested record (in this case, a copy of the written hazard communication program) "in a reasonable time...but in no event later than fifteen (15) days...." Some employers have incorrectly interpreted this to mean that they have 15 days to produce a copy of the written program and make it available at the worksite. This is an incorrect interpretation; the intent behind the (e)(4) requirements of the HCS is to allow the employer up to 15 days to provide a written (photo or other) copy of the program to employees who request it. This does not mean the employer has 15 days in which to get the program to the worksite for employees to access. The written program must be available to employees at the worksite at all times, as per 1910.1200 (e)(1). (See Appendix A, discussion at (e)(2) page A-15.)
2. Air Contaminants. OSHA enforcement of the new Air Contaminants rule was effective September 1, 1989.

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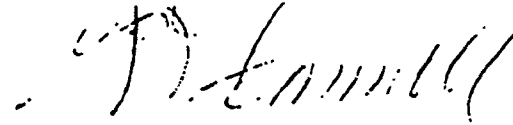
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Chemical manufacturers, importers, distributors or employers who prepare MSDS were responsible for incorporating the changes precipitated by the new standards within three (3) months. Therefore, all MSDS and labels must already have been modified if affected by this rulemaking and such modifications of both PEL (including STEL and skin notations) and health hazard data must now appear on the revised MSDS and labels, as appropriate.

3. 29 CFR 1910.1450, Occupational Exposure to Hazardous Chemicals in Laboratories. Quality control laboratories are usually adjuncts of production operations and are not covered under the Laboratory Standard, but rather would be covered under the HCS. For other laboratories covered under the Laboratory Standard, the requirements of the HCS are superseded (the more specific standard, 1910.1450, takes precedence). Both the training and information and the hazard identification requirements of the Laboratory Standard are more extensive than the HCS laboratory requirements.
 4. Other Health Standards. Paragraph (f)(4) of the HCS references labeling requirements of substance-specific standards. Employers must comply with these substance specific standards. For example, the ethylene oxide (ETO) standard provides a different labeling requirement than the HCS. Labels do not have to be affixed to containers of ETO unless the product is capable of producing employee exposure at or above the action level of 0.5 ppm as an 8-hour time weighted average (29 CFR 1910.1047 (j)(1)(ii)).
- N. Evaluation. In keeping with agency policy, an evaluation of the effectiveness of this instruction shall be conducted annually. An evaluation report from each Region shall be written and submitted to the Directorate of Compliance Programs within 30 days of the close of the fiscal year. Elements to be considered in the evaluation are the following:
1. Are enforcement and citation policies clear?
 2. Are particular problems not addressed or inadequately addressed in this instruction?

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3. Are parts of this instruction not useful?



Gerard F. Scannell
Assistant Secretary

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Appendix A

Clarifications and Interpretations of the Hazard Communication Standard (HCS).

This appendix includes clarifications and interpretations which respond to the most frequently asked questions and points of common misunderstanding. Where possible, clarifications are keyed to the most applicable paragraph of the HCS. In many cases a clarification applies to an entire paragraph of the standard. These are included after each section.

Purpose.

- (a) (2) OSHA's position is that State standards can be enforced only under the auspices of an OSHA-approved State plan. States without State plans are preempted from addressing the issue of Hazard Communication. Community right-to-know standards are outside the jurisdiction of OSHA and are not affected by this position. Inquiries regarding preemption that require in depth knowledge of this subject shall be referred through the Directorate of Compliance Programs to the Office of State Programs for response.

The agency's position regarding State standards has been described in OSHA Instruction STP 2-1.117. This should be consulted when answering questions regarding such State standards.

Scope and Application.

- (b) (1) The HCS has a unique requirement for downstream disclosure of information from chemical manufacturers and importers to employers receiving their products. This downstream flow of information is essential to the complete implementation of the standard, but does create enforcement situations that have not been encountered with previous standards. The CSHO's familiarity with the procedures established in this instruction to address such situations is essential to implementation of the HCS.

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- (b) (2) The phrase "known to be present" is essential to understanding the scope of the standard. If a hazardous chemical is known to be present by the chemical manufacturer or the employer, it is covered by the standard. This includes chemicals to which employees may be exposed during normal operations or in a foreseeable emergency. This means that even though an employer did not create the hazard, such as silica exposure during concrete demolition, or the hazards of exposure to the chemicals brought onto a multi-employer worksite by other employer(s), the standard applies and the employer whose employees are exposed to chemicals known to be present should include hazard communication information about these exposure situations in his workplace hazard communication program.

By-products are also covered by the HCS. Employers' hazard determination procedures must anticipate the downstream use of their products and account for any hazardous by-products which may be formed. For example, a manufacturer of gasoline must inform downstream users of the hazards of carbon monoxide, since carbon monoxide is a hazardous chemical and is a "known to be present" by-product resulting from the use of gasoline. Similarly, manufacturers of diesel fuel must inform downstream users of the potential human carcinogenicity of diesel exhaust on the MSDSs for diesel fuel. (See NIOSH Current Intelligence Bulletin No. 50, August, 1988.)

The terminology "exposed under normal conditions of use or in a foreseeable emergency" excludes products or chemicals that do not meet this condition. For example, a chemical that is inextricably bound in a mixture and presents no potential for exposure would not be covered. This paragraph must be read in conjunction with the definition of exposure which specifically includes potential (either accidental or possible) exposure. (See the FOM for guidance on citing potential exposure.) Further, employees such as office workers who encounter chemicals only in non-routine, isolated instances are not covered. However, an office worker who works in a graphic arts department and routinely uses paints, adhesives, etc., would be covered by the HCS.

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OSHA has never considered either radioactivity or biological hazards to be covered by the HCS. If, however, another type of hazard is presented along with the material (e.g., a container with a biological sample packed in a hazardous solvent), then the container would be subject to the requirements of the HCS for the other hazardous chemical.

- (b) (3) The coverage of laboratories is limited under the HCS. Although the standard does not specifically define the term "laboratory", it is intended to mean a workplace where relatively small quantities of hazardous chemicals are used on a nonproduction basis; i.e., bench-scale operations. The definition would include research facilities as well as quality control laboratory operations located within manufacturing facilities. Establishments, however, which produce samples or chemical standards to be sent out to other employers covered by the HCS would not fall under the standard's term for a laboratory. Those employers who ship hazardous chemicals would be considered either chemical manufacturers or distributors and must label in accordance with paragraph (f) (1) and provide MSDS per paragraphs (g) (6) and (g) (7).

29 CFR 1910.1450, Exposure to Hazardous Chemicals in Laboratories, addresses hazard communication requirements in laboratories. It is consistent with the HCS, but also has some additional requirements that must be applied in laboratories covered by that rule. The operating definition of a laboratory is not the same for both standards. 29 CFR 1910.1450 covers only laboratories meeting criteria of "laboratory use" and "laboratory scale" and excludes procedures that are part of a production process (55 FR 3328). The preamble to 29 CFR 1910.1450 states "... most quality control laboratories are not expected to meet the qualification for coverage under the Laboratory-Standard. Quality control laboratories are usually adjuncts of production operations..." (55 FR 3312). Quality control laboratories would therefore generally be covered by the HCS.

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Under the HCS, laboratories do not have to have a written hazard communication program. Therefore, when the required training is performed, the part that deals with the program availability will simply point out that such written programs are not required for laboratories.

Some manufacturers of chemical specialty products have interpreted the laboratory provisions as exempting them from coverage. These operations are considered to be manufacturing processes, and are not exempted. Furthermore, a pilot plant operation is also considered to be a manufacturing operation, not a research laboratory operation. In addition, establishments such as dental, photofinishing, and optical laboratories clearly are not considered laboratory operations for the purposes of this standard since they are engaged in the production of a finished product.

Quality control samples taken in a plant must be labeled, tagged, or marked unless the person taking the sample is also going to be performing the analysis, and thus the sample would come under the portable container exemption. A hand-written label may be utilized as long as required label information is present. The rack in which samples are placed could be labeled in lieu of labeling individual samples if the contents and hazards are similar.

- (b) (4) Since all containers are subject to leakage and breakage, employees who work in operations where they handle only sealed containers (such as warehousing) are potentially exposed to hazardous chemicals and therefore need access to information as well as training. The training required for employees who handle sealed containers is dependent upon the type of chemicals involved, the potential size of any spills or leaks, the type of work performed and what actions employees are expected to take when a spill or leak occurs.

Employers are required to obtain a MSDSs for chemicals in sealed containers if an employee requests one. The employer's attempt must begin promptly (within a day) in order to be consistent

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with the requirement that available sheets be accessible during each shift in the work area.

- (b) (5) These exemptions apply to labeling requirements of the HCS only and are not intended to provide a complete exemption from the standard.
- (b) (6) This paragraph totally exempts certain categories of substances from coverage under the HCS. Hazardous waste is completely exempted from the standard when subject to regulation by the Environmental Protection Agency (EPA), under the Resource Conservation and Recovery Act (RCRA). If the waste is not regulated under RCRA, then the requirements of the standard apply. Once the material is designated as hazardous waste as defined under RCRA, it is totally exempted. Other chemicals which are used by employees at a hazardous waste site that are not hazardous waste are covered under the HCS. (An example would be an acid brought on site by the employer to neutralize a waste product.)

Under the current rule, whenever a consumer product is used in a manner that is not comparable to typical consumer use, it is covered by the HCS. The standard requires the employer to ascertain whether the workplace use is more frequent, or of longer duration than would be expected in normal consumer use. Exposures in these situations would be greater, and thus the need increases for additional information for employee protection. The use of cans of spray paint during production runs rather than for occasional, short, one-time applications that typify consumer use is an example of hazardous chemical use which would not qualify as consumer product use.

The key to the definition of "article," and thus the exemption, is the term "under normal conditions of use." For example, an item may meet the definition of "article," but produces a hazardous by-product if cut or burned. If the cutting or burning or otherwise processing the article in such a way as to result in employee exposure to a hazardous chemical is not considered part of its normal conditions of use, the item would be an "article" under the standard, and thus be exempted.

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As mentioned in the preamble to the August 24, 1987 rule, exposures to releases of "very small quantities"; e.g., a trace amount, are not considered to be covered by the HCS. Thus, absent evidence that releases of such "very small quantities" could cause health effects in employees, the article exception to the rule's requirements would apply. The following items are examples of articles:

- Stainless steel table
- Vinyl upholstery
- Tires
- Adhesive tape

The following items are examples of products which would NOT be considered "articles" under the standard, and would thus not be exempted from the requirements:

Metal ingots that will be melted under normal conditions of use.

Bricks for use in construction operations, since, under normal condition of use, bricks are cut or sawed, thereby resulting in exposure to crystalline silica.

Switches with mercury in them that are installed in a maintenance process when it is known that a certain percent break under normal conditions of use.

Lead acid batteries which have the potential to leak, spill or break during normal conditions of use, including foreseeable emergencies. In addition, lead acid batteries have the potential to emit hydrogen which may result in a fire or explosion upon ignition.

It should be noted that the only information that has to be reported in these situations is that which concerns the hazard of the released chemical. The hazardous chemicals which are still bound in the article would continue to be exempted under the "article" exemption.

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The wood and wood products exemption was never intended by OSHA to exclude wood dust from coverage. This fact was clarified in the preamble to the final rule published August 24, 1987. (See Federal Register, Vol. 52, No. 163, page 31863.) The permissible exposure limits for wood dust recently adopted under OSHA's PEL Project must be included on the MSDSs, which will generally be developed by the sawmill. Further, any chemical additives present in the wood which represent a health hazard must also be included on the MSDSs and/or label as appropriate.

Definitions.

(c) The definitions of the HCS must be heavily relied upon to properly interpret and apply the standard. In many cases terms within a definition are themselves defined within the same section.

Article. The definition has been interpreted to permit the release of very small quantities of a hazardous chemical and still qualify as an article provided that a physical or health risk is not posed to the employees. Examples of very small quantities would be the release of a few molecules or trace amounts of a hazardous chemical (52 FR 31865).

Chemical Manufacturer. Based on this definition and that of its related terms, an employer that manufactures, processes, formulates, or repackages a hazardous chemical is considered a "chemical manufacturer." This definition includes someone who blends or mixes chemicals; such persons may comply with the standard by merely transmitting the relevant label/MSDSs for the ingredients, which they received in good faith from their suppliers, to their downstream customers. Oil and gas producers are chemical manufacturers for the purposes of the HCS because they process hazardous chemicals for use or distribution.

For substances which are grown, cultivated, or harvested and which are not processed by the grower before being sold, the first employer meeting the definition of "chemical manufacturer" will be responsible for performing the hazard determination, developing or obtaining the MSDSs, and labeling containers of the hazardous chemicals. For example, saw mills and grain elevators will be considered to be the "chemical manufacturer" since they are the first employers who meet the definition. A saw mill processes timber into lumber (meets

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definition of "produce") thereby creating wood dust in the process, which is a hazardous chemical under the HCS. Grain elevators will also meet the definition of a "chemical manufacturer" since they treat, dry, and move grain, creating grain dust (which is also a hazardous chemical under the standard).

Commercial Account. A commercial account is an arrangement whereby a retail distributor sells hazardous chemicals to an employer, generally in large quantities over time and at costs that are below the regular retail price.

Container. This definition includes tank trucks and rail cars. A room or an open area is not to be considered a container and, therefore, a hazardous chemical such as wood dust on the floor of a workplace, or a pile of sand at a construction site, would not have to be labeled. Since only "containers" need to be labeled under the HCS, if there is no container, there is no requirement to label.

Pipes or piping systems, engines, fuel tanks, or other operating systems in a vehicle are not considered to be containers. Thus, LP cylinders that serve as the source of fuel used to operate lift trucks, for example, would not have to be labeled once the fuel tank is installed, although the spare LP cylinder(s) in storage must be labeled since they are containers. Although containers of fuel such as gasoline and LP clearly are within the scope of the HCS, no requirement exists to label the lift truck. The producer still has an obligation to assess the hazards associated with the fuels, including their by-products.

The standard requires all containers of hazardous chemicals leaving the workplace to be labeled with the required information. Even very small containers must be tagged or marked in a fashion that fulfills the intent of the standard.

Distributor. A distributor who blends, mixes or otherwise changes the chemical composition of a chemical is to be considered a chemical manufacturer under the HCS. As a result, employees in those operations are to be considered just like other employees who use hazardous chemicals. A distributor, therefore, performing a chemical manufacturing operation (i.e., blending, mixing, etc.) becomes a chemical manufacturer and will probably need to give additional training to those employees performing the manufacturing

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operation since the distributor will not be able to satisfy the sealed container provision in paragraph (b)(4) and invoke its limited requirements.

Employee. Employees, such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered. For example, a worker who occasionally changes the toner in a copying machine would not be covered by the standard. However, an employee who operates a copying machine on a full-time basis would be covered by the provisions of the HCS for any hazardous chemicals used.

Exposure. It is important to note, especially for purposes of chemical manufacturers' hazard determinations, that "exposure" includes any route of entry (inhalation, ingestion, skin contact or absorption) and includes potential (accidental or possible) exposure including exposure that could result in the event of a foreseeable emergency.

Hazard Determination.

- (d)(1) Although the chemical manufacturer and the importer have the primary duty for hazard evaluation, it is expected that some employers will choose to do their own evaluations. Whoever does the evaluation is responsible for the accuracy of the information. The evaluation must assess the hazards associated with the chemicals including those hazards related to any anticipated or known use which may result in worker exposure.

Known intermediates and by-products are covered by the HCS. Decomposition products which are produced during the normal use of the product or in foreseeable emergencies (e.g., plastics which are injection molded, diesel fuel emissions) are covered if the hazardous chemicals are known to be present. "Foreseeable emergency" does not include employee exposures in the event of an accidental fire, but does include equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical.

An employer may rely upon the hazard determination performed by the chemical manufacturer. Normally, the chemical manufacturer possesses knowledge of

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hazardous intermediates, by-products and decomposition products that can be emitted from his chemical product. However, if the employer obtains information regarding the hazards from a source other than the manufacturer, the employer is responsible for including such information in his hazard communication program.

- (d) (2) The preparer of the MSDSs/labels is required to consider all available scientific evidence concerning the hazard(s) of a chemical in addition to consulting the floor reference sources listed in paragraph (d) (3) of the standard. (See Appendix C of this instruction for further guidance on evaluating health effects.) No testing of chemicals to determine hazards is ever required; the evaluation is to be based on information currently available in the literature.

Where at least one positive scientific study exists which is statistically significant and demonstrates adverse health effects, the MSDSs must include the adverse health effects found. This does not necessarily mean that the results of all such studies would also appear on the label.

The standard's definition of "chemical" is much broader than that which is commonly used. Thus, steel coils which are cut and processed, castings which are subsequently ground or welded upon, carbide blades which are sharpened, and portland cement, which is both a skin and eye irritant, are all examples of chemicals which would normally be covered since exposure to hazardous chemicals would occur in the workplace.

Any substance which is inextricably bound in a product is not covered under the HCS. For example, a hazard determination for a product containing crystalline silica may reveal that it is bound in a rubber elastomer and under normal conditions of use or during foreseeable emergencies cannot become airborne and therefore cannot present an inhalation hazard. In such a situation, the crystalline silica need not be indicated as a hazardous ingredient since it cannot result in employee exposure.

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- (d)(3) Any compound of a substance regulated in part 1910, Subpart Z, including those listed in the Z Tables or for which there is a TLV in the latest edition of the ACGIH, Threshold Limit Values listing, is considered to be part of the floor of hazardous chemicals covered by the standard.

Nuisance Dust or Particulates. The term "nuisance dust" is no longer used in 1910.1000. A number of particulates now have specific PELs and are covered by the HCS. The particulates not otherwise regulated are exempt unless evidence exists that they present a health or physical hazard other than physical irritant effects. For these chemicals, the "Particulates not otherwise regulated" PELs must be included on the MSDSs.

- (d)(4) On December 20, 1985, OSHA published an interpretive notice in the Federal Register regarding the carcinogenicity of lubricating oils (VOL. 50 FR 51852). The notice was published in response to a number of inquiries which were received regarding the applicability of the HCS requirements to naphthenic lubricating oils which are refined using a hydrotreatment process. These types of oils may be found in a number of industrial operations, including ink manufacture and the production of synthetic rubber.

Positive findings of carcinogenicity by the International Agency for Research on Cancer (IARC) must be reported under the HCS. The IARC Monograph 33 concludes that there is sufficient evidence to indicate that mildly hydrotreated and mildly solvent refined oils are carcinogenic. Therefore, under the requirements of the HCS, producers of such materials must report such findings on the MSDSs for the substance and include appropriate hazard warnings on labels.

IARC also stated that there is inadequate evidence to conclude that severely hydrotreated oils are carcinogenic, and that there is no evidence to indicate that severely solvent-refined oils are carcinogenic. In the absence of any valid, positive evidence from sources other than IARC regarding the carcinogenicity of severely

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hydrotreated or severely solvent-refined oils, no reference to carcinogenicity need be included on the MSDSs and labels for such materials. IARC has also concluded that when an oil is refined using sequential processing of mild hydrotreatment and mild solvent refining, there is no evidence of carcinogenicity.

The questions posed to OSHA concerned the process parameters used for mild hydrotreatment. OSHA examined the studies upon which IARC based its positive findings of carcinogenicity to determine the process parameters used to refine the oils studied. Any oil will be considered to be mildly hydrotreated if the hydrotreatment process was conducted using pressures of 800 pounds per square inch or less, and temperatures of 800 degrees Fahrenheit or less, independent of other process parameters. If the oil is being produced within the specified parameters, it must be considered to be potentially carcinogenic under the requirements of the HCS.

It should also be noted that negative evidence generated by a producer does not negate the positive IARC finding and cannot be used to dispute positive findings relating to any substance. The producer is free to report any negative findings as well, but there is a positive duty to report IARC's conclusions.

- (d) (5) While the HCS does not require testing of chemicals to determine their hazards, some preparers of MSDSs are apparently considering testing mixtures as a whole so as not to have to list individual hazardous ingredients on the MSDSs. Should employers choose to pursue this option; i.e., to test the mixture as a whole, a full range of tests would have to be performed, including tests to determine health hazards (acute and chronic) and physical hazards. Employers may also choose to test for certain hazards or properties and rely on the literature for published information on the other hazards. Compliance officers can expect to see MSDSs which use both the tested and untested mixture approaches; e.g., perhaps an employer has determined a flashpoint for the mixture, but has not tested it

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for health hazards but has relied instead on information in the published literature for this section of the MSDSs. Such an approach to hazard determination is acceptable under the HCS. Where the physical characteristics have not been objectively determined, the employer may present data on the components in ranges; e.g., flash points range from 70 to 100 degrees fahrenheit.

- (d) (6) Employers who are not planning to evaluate the hazards of chemicals they purchase can satisfy the requirement for written hazard evaluation procedures by stating in their written program that they intend to rely on the evaluations of the chemical manufacturer or importer.

Downstream employers/employees do not have access to the written procedures maintained by the chemical manufacturer/importer. If there appears to be a problem with the information received, and it cannot be resolved with the supplier of the product, the matter should be referred to OSHA for investigation. OSHA does have access to the written procedures.

Written Hazard Communication Program.

- (e) (1) All employers with employees who are, or may be, exposed to hazardous chemicals known to be present in their workplaces, must develop, implement, and maintain at primary workplace facilities and fixed worksite locations a written hazard communication program. Programs must be developed whether the employer generates the hazard or the hazard is generated by other employers. An effective program is one that promotes the safe handling and use of hazardous chemicals in the workplace.
- (e) (2) Although a multi-employer worksite is not defined in the HCS, it is intended to mean those establishments where employees of more than one employer are performing work and are exposed to hazardous chemicals. The MSDSs information exchange or access requirements pertain to employers who introduce hazardous chemicals into the worksite and expose another employer's employees.

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All types of worksites may be "multi-employer worksites," not just construction sites. For example, a manufacturing employer becomes the "exposing employer" if he produces, uses or stores chemicals in such a way that he may expose the employees of another employer to hazardous substances. Now that the HCS is in effect in all industry sectors, an exposing employer must advise outside contractors working at his plant about the hazardous chemicals that the contractor's employees may be exposed to and vice versa.

Paragraph (e)(2)(i) requires an employer on a multi-employer worksite to provide other employers with a copy of pertinent MSDSs or to make them available at a central location in the workplace. This requirement covers each hazardous chemical to which the other employer's employees may be exposed. Therefore, one employer does not actually have to physically give another employer the MSDSs, but the employer must inform the other employer of the location where the MSDSs will be maintained (e.g., in the general contractor's trailer). The performance-orientation of the rule allows employers to decide the method to be used to accomplish the required exchange of information.

In the construction industry, it would probably be most efficient for the general contractor to coordinate the requirement for maintaining MSDSs on site. For example, the general contractor could keep and make available MSDSs in the office on the site.

An employer must provide MSDS(s) to other employers or make them available in a central location if the other employers will have employees exposed or potentially exposed. The potential exposure could even occur at some time in the future. For example, if a painting contractor's workers are using flammable solvents in an area where another subcontractor's workers are welding pipes, then the painting contractor must ensure that the MSDSs for the flammable solvents are available to the welding subcontractor's employees. However, if electricians are not working near or at the same time as the painting contractor, and therefore it is not

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possible for either employer's employees to be exposed, then no exchange of MSDSs is required.

The HCS's "multi-employer workplaces" provision at (e)(2) states that employers who produce, use or store hazardous chemicals at a worksite in such a way that the employees of other employers may be exposed must include in their written hazard communication program the methods to ensure that the other employers are adequately informed of the hazards and appropriate precautionary measures to be taken so they can protect their own employees.

The intent of the HCS is met on multi-employer worksites when information on the hazards of chemical substances at the worksite is available to all affected employers and employees. All employers with employees potentially exposed to hazardous chemicals therefore must have in place an effective written hazard communication program that details how this intent will be met.

If an employer does not bring hazardous chemicals on site, a list of hazardous chemicals is not required as part of his hazard communication program. Nevertheless, the employees must be trained how to use labels and MSDSs, to recognize hazards and to follow appropriate protective measures.

An exception to the requirement that the written hazard communication (HCP) be kept on-site on multi-employer worksites may be found in situations where an employee or employees must travel between workplaces or where their work is carried out at more than one geographical location, yet who, at some time, report to a primary workplace facility where the written HCP is maintained. The standard sets forth, at (e)(1), a positive requirement for the written program to be maintained "at the workplace." OSHA has interpreted this requirement to mean that the written program must be kept on-site, at all times, or even in the work truck of employees who travel between worksites.

However, the Agency has proposed, in the 1988 Notice of Proposed Rulemaking, to add a new subparagraph to the paragraph (e) requirements to allow the written

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program to be maintained at a "central location at the primary workplace facility" for employees who travel between workplaces during a workshift (proposed new paragraph (e)(5)). The final rule presently allows MSDSs to be maintained at the central workplace for employees who travel between workplaces during a workshift (paragraph (g)(9)). The (g)(9) provisions also require that employees have immediate access to information in an emergency which is important since MSDSs must be readily accessible to employees in the event of an emergency, accidental leak, spill, etc.

Unlike the immediate need for MSDSs information to be readily accessible to employees while they are in their work area(s), the information contained in an employer's written HCP is mainly procedural and its presence on the worksite other than a fixed location may not have a direct or immediate relationship to employee safety or health. This is especially true in situations where employers are implementing an effective overall HCP and whose employees have already received the required hazard communication training. This means that employees are aware of the requirements of the employer's HCP, including being familiar with the list of hazardous chemicals known to be present, the labeling system in use, the presence of and accessibility to MSDSs, and have been trained in accordance with paragraph (h) requirements. The need for the program to be on-site, therefore, in situations where employees travel or are dispatched from a primary workplace location (e.g., administrative offices) where the written program is maintained to a multi-employer worksite may bear no immediate relationship to safety and health and may, in the professional judgment of the CSHO and Area Director, be considered a "de minimis" violation of section (e)(1). (See the FOM, Chapter IV, B.6., pages IV 30-31.)

This citation policy change applies even in situations where the employee does not return to the primary workplace during the workshift as long as the employee(s) is aware of the content of the program and the methods the program contains that affect the sharing of the hazard communication

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information required at (e)(2)(i-iii). Stated in another way, if hazard communication information (accessibility of MSDSs, the employer's labeling system, etc.) is not being shared with other on-site employers and the employees are unaware of the methods outlined in the program which have been developed to accomplish this intent, then the need for the program to be on-site would bear a direct relationship to safety and health and the absence of the program on-site would not be a "de minimis" violation.

At fixed worksite locations, the requirement for the written hazard communication program to be maintained on-site and readily accessible to employees remains. Again, an effective program is one that promotes the safe handling and use of hazardous chemicals in the workplace. Its immediate presence in other than fixed worksite locations bears a direct relationship to safety and health only when its procedural direction is necessary to direct the employers in their implementation of the overall hazard communication program's requirements.

OSHA's compliance and enforcement policies for multi-employer worksites are set forth in the FOM, Chapter V, sections F.1. and 2., which state that, with regard to working conditions where employees of more than one employer are exposed to a hazard, the employers "with the responsibility for creating and/or correcting the hazard" shall be cited for violations of OSHA standards that occur on that multi-employer worksite. Normally citations for violations shall be issued to each of the exposing employers as well as to the employer responsible for correcting or ensuring the correction of the condition.

Whenever the general contractor or the construction manager on a multi-employer worksite is in the best position to ensure that all contractors on site with hazardous materials comply with the standard's requirements, the general contractor or construction manager shall be cited for violations of the HCS as well as any contractor who has not complied.

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- (e)(4) Paragraph (e)(4) requires employers to make the written program available upon request to employees, OSHA and NIOSH, in accordance with the requirements of the Access Standard, 29 CFR 1910.20(e). This requirement is interpreted to apply to the requirement of the employer to provide a copy of the written program within the time periods discussed in 1910.20 (i.e., no later than 15 days after the request for access is made). It is not meant to allow an employer of a primary workplace facility or a fixed location worksite a 15-day time period in which to make the program available for inspection on-site. For fixed worksites and primary workplace facilities, the written hazard communication program must be maintained on-site at all times. OSHA interprets the 15-day period referenced in (e)(4) to pertain to the length of time the employer has in which to provide a copy of the program to the requesting party. (See discussion at subparagraph (e)(2) of this Appendix for OSHA citation policy regarding the maintenance of written programs on multi-employer or mobile worksite locations.)

Labels and Other Forms of Warning.

- (f)(1) The purpose for labels under the standard is clear.
and Labels provide an immediate warning to employees of
(f)(5) the hazards they may be exposed to and, through the chemical identity, labels provide a link to more detailed information available through MSDSs and other sources. Labels must contain the identity of the chemical, an appropriate hazard warning, and the name and address of the responsible party.

OSHA recognizes that the degree of detail on a label needed to convey a hazard may be different within a workplace where other information is readily available, compared to labels required on shipped containers, where the label may be the only information available.

The standard's preamble recognizes the existence of numerous labeling systems that are currently in use in industry. Examples include the HMIS (Hazardous Materials Information System), NFPA (National Fire Protection Association) and ANSI (American National Standards Institute) systems. Some of these systems

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rely on a numerical and/or alphabetic codes to convey the hazards. Although these labeling systems may not convey the target organ effects, the intent of the standard is to permit the use of these systems for inplant labeling as long as the written Hazard Communication Program adequately addresses the issue.

Paragraph (e)(1) of the HCS requires employers to include in their written hazard communication program a description of how the training requirements of paragraph (h) will be met, and subparagraph (e)(2)(ii) requires employees to be trained on the physical and health hazards of the chemicals they work with. OSHA has interpreted this to include being apprised of the target organ effects of the hazardous chemicals employees are or may be exposed to while working. The training program must therefore explicitly instruct employees on how to use and understand the plant's alternative labeling systems to ensure that employees are aware of the effects (including target organ effects) of the hazardous chemicals to which they are potentially exposed.

CSHOs must carefully review the overall hazard communication program to ensure its effectiveness in meeting all the requirements of the HCS. One way for CSHOs to determine the effectiveness of the training program, including employee understanding of target organ effects, especially when numerical or other systems are used for in-plant labeling, is through employee interviews. An employer relying on one of the above-mentioned labeling systems may therefore have to augment his hazard communication training program to specifically address the target organ effects that may not be easily discernable from a numerical warning system.

However, for shipped containers the hazard warning must be included on the label and must specifically convey the hazards of the chemical. OSHA has consistently maintained that this includes target organ effects. Casarett and Doull's Toxicology, the Basic Science of Poisons discusses target organs:

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Most chemicals that produce systemic toxicity do not cause a similar degree of toxicity in all organs but usually produce the major toxicity to one or two organs. These are referred to as target organs of toxicity for that chemical.

Appendix A of the HCS clearly states that employees exposed to health hazards must be apprised of both changes in body functions and the signs and symptoms that may occur to signal the changes. A label incorporating a rating system is not permitted for shipped containers unless additional label information is affixed to the container. The specific hazards indicated in the standard's definitions for "physical" and "health" hazards are applicable. Phrases such as "caution", "danger", or "harmful if inhaled", are precautionary statements, not hazard warnings. The definition of "hazard warning" states that the warning must convey the hazards of the chemical and is intended to include the target organ effects. If, when inhaled, the chemical causes lung damage, then that is the appropriate warning. Lung damage is the hazard, not inhalation.

There are some situations where the specific target organ effect is not known. Where this is the case, the more general warning statement would be permitted. For example, if the only information available is an LC50 test result, "harmful if inhaled" may be appropriate.

It will not necessarily be appropriate to warn on the label about every hazard listed in the MSDSs. The data sheet is to address essentially everything that is known about the chemical. The selection of hazards to be highlighted on the label will involve some assessment of the weight of the evidence regarding each hazard reported on the data sheet. Assessing the weight of the evidence prior to including a hazard on a label will also necessarily mean consideration of exposures to the chemical that will occur to workers under normal conditions of use, or in foreseeable emergencies. However, this does not mean that only acute hazards are to be covered on the label, or that well substantiated

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hazards can be left off the label because they appear on the data sheet.

An example of a situation where it may not be necessary to include the presence of a hazardous ingredient in a formulation when developing the product's label follows: Recently, IARC published monograph no. 44, entitled, "Alcohol Drinking." IARC's determination on the carcinogenicity of ethanol is based on chronic exposure to ethanol through human consumption via the drinking of alcoholic beverages, over time. In performing the hazard determination on a product mixture which contains ethanol as one of the hazardous ingredients, a chemical manufacturer must, under the HCS, include mention of ethanol as a hazardous ingredient on the MSDSs, along with the findings as published in the IARC monograph. As part of the hazard determination, manufacturers must consider exposures to the chemical product that would occur under normal conditions of use or in foreseeable emergencies, and toxicity associated with all routes of entry. If a chemical manufacturer were to formulate a product which contained ethanol as part of the mixture, but the product's intended use did not involve exposure through ingestion of the ethanol, the manufacturer could document the intended use and resultant exposure scenarios on the MSDSs but not label the product as a "carcinogen." Again, the information about the carcinogenicity of ethanol would need to appear on the MSDSs, but since exposure under normal conditions of use, etc., would not involve ingestion and since the only evidence calling ethanol a human carcinogen comes from studies involving chronic alcoholic beverage ingestion, the weight of the evidence would preclude the requirement to warn of carcinogenic hazards on the label of the product.

Exposure calculations are not permitted in determining whether a hazard must appear on a label. If there is a potential for exposure other than in minute, trace or very small quantities, the hazard must be included when substantiated as required by the HCS. Suppliers may not exclude hazards based on presumed levels of exposure downstream (i.e., omitting a carcinogenic hazard warning because, in

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the supplier's estimate, presumed exposures will not be high enough to cause the effect). The hazard is an intrinsic property of the chemical. Exposure determines degree of risk and should be addressed in training programs by the downstream employer.

The labeling requirements for shipped containers leaving the workplace apply regardless of whether the intended destination is interstate or intrastate. If the shipment is to another establishment, even within the same company, the shipped labeling provisions apply. Even sealed containers intended for export must comply with the labeling provisions if these containers leave the workplace and if downstream employees such as dock workers may be exposed to the hazardous chemical(s).

Containers must be labeled as soon as practicable before leaving the workplace. If the container is a tank truck, rail car, or other vehicle carrying a hazardous chemical(s) not already in a labeled container(s), the appropriate label or label information may either be posted on the tank or vehicle, or attached to the accompanying shipping papers or bill of lading. Employers purchasing hazardous chemicals must ensure that their employees are aware of the label warning before potential exposure to incoming chemicals occur. A label may not be shipped separately, even if it is prior to shipment of the hazardous chemical since to do so defeats the intended purpose which is to provide an immediate hazard warning. Mailing labels directly to purchasers will bypass those employees involved in transporting the hazardous chemical. (Note the exception in (f)(2) for solid metals. Containers of solid metals not otherwise meeting the definition of an article need to be labeled only with the initial shipment (unless the information on the label changes).)

Although no explicit requirement exists regarding the updating of labels when new information becomes available, the warning would no longer be appropriate if the MSDSs contained new hazard information that needed to be included on the label. Since the MSDSs must be updated within three months of receipt of new information, the label must be,

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too, in order to accurately reflect the MSDSs information. Note that distributors have no affirmative obligation to create the container labeling information for hazardous chemicals which they merely send unchanged to their customers, but they do have the responsibility to obtain missing labels from the chemical manufacturer/importer. Distributors must duplicate label information on chemicals which they repackage.

- (f)(5) An employer's obligation to label in-plant
and containers of hazardous chemicals requires that all
(f)(6) appropriate hazard warnings appear on the label pursuant to (f)(5)(ii). For example, an employer who elects to label only some of the health hazard warnings associated with the chemical while omitting other recognized hazards, such as carcinogenicity, selectively deprives his employees of critical hazard information and shall be cited under (f)(5)(ii). However, if the downstream employer has relied in good faith on the adequacy of the label as prepared by the chemical manufacturer and the label contains an inadequate hazard warning(s), the CSHO shall follow the referral procedures outlined in K.7.a.(7) of this instruction.

For purposes of reviewing alternative in-plant labeling methods under (f)(6), the CSHO shall note that this provision allows alternative means of identification only in the event that an employer chooses to forego labeling an in-plant container under (f)(5). Thus, an employer may not claim that it supplemented its partial compliance with (f)(5)(ii); i.e., labeling only some of the chemical's health hazard warnings, with one of the alternative means of identification enumerated in (f)(6). The key to evaluating the effectiveness of any alternative labeling method is to determine whether it provides an immediate visual warning of the chemical hazards of the workplace, identifies the applicable chemical and container, and conveys the appropriate hazard warnings. The alternative labeling system must also be readily accessible to all employees in their work area throughout each workshift. For purposes of this provision, the term "other such written materials" does not include material safety data sheets used in lieu of labels.

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Carcinogen Labeling.

As specified in the rule, chemicals which have been indicated as positive or suspect carcinogens by either OSHA, the International Agency for Research on Cancer (IARC) or the National Toxicology Program (NTP) will be considered to be carcinogenic for purposes of the HCS.

Those chemicals identified as being "known to be carcinogenic" and those substances that may "reasonably be anticipated to be carcinogenic" by NTP must have carcinogen warnings on the label and information on the MSDSs. For NTP, appearing on the annual listing constitutes a positive finding of suspect or confirmed carcinogenicity.

OSHA's comprehensive substance specific regulations in Subpart Z of 1910 contain provisions for labeling. Therefore, containers of hazardous chemicals labeled in accordance with the substance specific standard will be deemed to be in compliance with the health effects labeling requirements of the standard. An exception to this is OSHA's Formaldehyde Standard, for which an administrative stay of the hazard communication provisions (sections (m)(1)(i) and (m)(1)(ii)) is in effect. The HCS is enforceable for these provisions of the formaldehyde standard.

It should be noted that in many instances the labeling requirements of the comprehensive substance specific standard address only carcinogenicity and do not address acute health hazards or physical hazards. Those chemicals regulated by OSHA as carcinogens in substance specific standards that include labeling requirements are listed below:

Asbestos
4-Nitrobyphenyl
Alpha-Napthylamine
Methyl Chloromethyl Ether
3,3' Dichlorobenzidine (and its salts)
Bis-Chloromethyl Ether
Beta-Napthylamine
Benzidine
4-Aminodiphenyl
Ethyleneimine
Beta-Propiolactone

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2-Acetylaminofluorene
4-Dimethylaminoazobenzene
N-Nitrosodimethylamine
Vinyl Chloride (and Polyvinyl Chloride)
Inorganic Arsenic
1,2 Dibromo-3-Chloropropane
Acrylonitrile
Ethylene Oxide
Formaldehyde
Benzene

In addition to those chemicals for which OSHA has substance-specific standards, OSHA has set new permissible exposure limits for several substances based on avoidance of cancer. These substances are specified in the preamble to the Air Contaminants rule published January 19, 1989. (See Table C15-1 on pages 2669-71 of the Federal Register notice of that date.)

IARC evaluates chemicals, manufacturing processes, and occupational exposures as to their carcinogenic potential. The IARC criteria for judging the adequacy of available data and for evaluating carcinogenic risk to humans were established in 1971 (Volumes 1-16) and revised in 1977 (Volumes 17 and following).

The individual monographs contain evaluations on specific chemicals or processes. At the conclusion of each evaluation, IARC provides a summary evaluation for the individual chemical. Periodically, IARC publishes Supplements in which chemicals that have already been evaluated in previous monographs are reevaluated. In cases where a chemical has been reevaluated, the most recent IARC evaluation shall be relied upon.

IARC provides a summary in Supplement 7 of the chemicals which have been evaluated in Volumes 1-42. Table I of Supplement 7 provides a summary evaluation of all chemicals for which human and animal data were considered. Table I of Supplement 7 also provides a summary classification of a chemical's carcinogenic risk:

Group 1 - The agent is carcinogenic to humans.

Group 2A - The agent is probably carcinogenic to humans.

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- Group 2B - The agent is possibly carcinogenic to humans.
- Group 3 - The agent is not classifiable as to its carcinogenicity to humans.
- Group 4 - The agent is probably not carcinogenic to humans.

All IARC listed chemicals in Groups 1 and 2A must include appropriate entries on both the MSDSs and on the label. Group 2B chemicals need be noted only on the MSDSs.

Individual monographs have been published subsequent to Supplement 7. For purposes of compliance with the MSDSs and labeling requirements, the IARC monograph's summary evaluation for the chemical can generally be relied upon but it may be necessary to review the actual evaluations. In some cases, a group of compounds may be listed in the summary as carcinogenic but closer examination of the appropriate monograph will reveal that IARC had data to support the carcinogenicity of only certain compounds. Those compounds are the only ones covered by the HCS. IARC also evaluates specific industrial processes or occupations for evidence of increased carcinogenicity. Findings that an occupation is at increased risk of carcinogenicity, without identification of specific causative agents, do not affect label or MSDSs requirements.

In addition, the existence of one valid, positive study indicating carcinogenic potential in either animals or humans is sufficient basis for a notation on the MSDSs. Further, if such studies include positive human evidence, then the label must contain carcinogen hazard warnings.

Table 1, below, represents a general guide regarding the labeling and MSDSs requirements under the HCS. The existence of positive human evidence on carcinogenicity always requires carcinogen warnings on the label. In addition, there may be instances where a carcinogen warning may be required for a chemical that is not listed by IARC or NTP but multiple animal studies indicate carcinogenicity. Such cases shall be reviewed by the Regional Administrator and coordinated by the Directors of Compliance and Health Standards Programs.

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TABLE 1

GUIDANCE FOR MSDS AND LABEL NOTATIONS
FOR CARCINOGENS

<u>Source</u>	<u>MSDS</u>	<u>Label</u>
Regulated by OSHA as a carcinogen	X	X
Listed on NTP Carcinogen Report	X	X
IARC--Group 1	X	X
IARC--Group 2A	X	X
IARC--Group 2B	X	Not Required
IARC--Group 3	Not Required	Not Required
IARC--Group 4	Not Required	Not Required
One Positive Study-Animal Only	X	Not Required
Multiple Animal Studies	X	Depends on weight of evidence; N.O. review needed.
One Positive Study-Some Human Evidence	X	X

Given the above criteria, benzene, which is regulated by OSHA as a carcinogen and for which several valid, positive human studies exist, would require both MSDSs and label notations whereas a substance for which only some animal data exist does not. Polyvinyl resin must be labeled as a carcinogen but final molded and extruded products do not need to be (as per 29 CFR 1910.1017). (See also the discussion on IARC's determination on the carcinogenicity of "Alcohol Drinking," IARC Monograph No. 44, as it pertains to labeling requirements (page A-15).)

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Material Safety Data Sheets.

- (g)(1) Chemical manufacturers/importers who choose to purchase data sheets for their products from information services, rather than developing them themselves, retain responsibility for providing the sheets and for assuring their accuracy. Employers who in good faith choose to rely upon the sheets provided to them by the chemical manufacturer/importer assume no responsibility for their contents.

The MSDSs requirements apply to free samples provided by chemical manufacturers and importers since the hazards remain the same regardless of the cost to the employer.

Even though solid metals are covered differently under the labeling requirements, the full MSDSs requirements still pertain.

Chemical manufacturers often receive requests for MSDSs from customers for chemicals or articles which are not covered under the HCS. The HCS does not require MSDSs to be provided under those circumstances. If the chemical manufacturer/importer chooses to provide the MSDSs as a customer service, it may be noted on the sheet that the chemical or article has been found by the company not to be covered by the rule. For example:

This product is not considered to be or to contain hazardous chemicals based on evaluations made by our company under the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The MSDSs may not indicate that OSHA has made such a finding for the product since the Agency does not make such case-by-case hazard determinations.

The safety and health precautions on the MSDSs must be consistent with the hazards of the chemicals. Some MSDSs include recommendations for protective measures that are for "worst case scenarios," e.g., recommending supplied air suits for products of relatively low toxicity. The HCS requires that

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accurate information be provided on the MSDSs. This applies as much to "overwarning" on the MSDSs/label as well as the absence of information ("underwarning").

Scrap dealers are generally considered distributors and, since their products are not articles, would NOT be exempt from the HCS. If their suppliers are furnishing articles which they did not manufacture, (such as a broken refrigerator), the supplier is not required to provide a label or MSDSs. However, if their suppliers added hazardous chemicals to the article, as would be the case if an employer scraps pipes that contained a hazardous chemical and continues to contain its residue, the supplier must provide a label and MSDSs to the scrap dealer. In addition, "article" manufacturers that sell for scrap those produced items that fail specification or suppliers who provide, for example, metal tailings from a manufacturing process, are considered by OSHA to have the required knowledge of the item's constituents and must develop and transmit MSDSs and labels to downstream scrap dealers.

- (g) (2) The OSHA Form 20 has been obsolete since May 1986. Simply following the titles of the blocks to complete the Form 20 will not result in an appropriate sheet, but it could be modified to comply. Any format is acceptable, as long as the required information is included. OSHA has published a sample MSDSs, form number OSHA-174. This is an optional form which may be used to comply with the HCS.

The requirement that the MSDSs be in English is intended to prevent importers of chemicals from transmitting MSDSs written in a foreign language. However, this requirement was not intended to prevent the translation into foreign languages to aid employee understanding.

If a hazardous chemical is present in the mixture in reportable quantities (i.e., 0.1 percent for carcinogens, and 1 percent for other health hazards), it must be reported unless the mixture has been tested as a whole or unless the material is

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bound in such a way that employees cannot be exposed. If there really is no exposure (and the standard defines exposure as including potential as well as measurable exposure by any route of entry), either under normal conditions of use or in a foreseeable emergency, then the chemical is not covered by the standard. (See paragraph (b)(2).) In the case of mixtures that are liquid, this provision has to be considered very carefully. For example, if silica is present in a wet mixture it is possible that, if the mixture dries upon application, there is a potential for the silica to become airborne, and thus a potential for exposure. The presence of silica must be indicated on the MSDSs for the liquid mixture in this situation.

For mixtures, if the employer is assuming the mixture has the same hazards as its hazardous components (i.e., no test data on the mixture as a whole), the data sheets for the components will satisfy the requirements of the standard for a data sheet for the mixture. These MSDSs must be physically attached to one another and identified in a manner where they can be cross-referenced with the label. This approach is acceptable provided the MSDSs includes the PEL, TLV, and other exposure limits for each ingredient that has been determined to be a health hazard.

Information must also be included on the MSDSs for ingredients of a mixture present in concentrations of less than 1% (or 0.1% for carcinogens) when the hazardous substance may be released in a concentration which exceeds a PEL or TLV or may present a health risk to exposed employees. An example of the latter may be TDI because it is a sensitizer in very small concentrations, thereby presenting a health risk that must be noted on the MSDSs.

A statement that the chemical is not a carcinogen is not required nor must the MSDSs format include a space for such a statement. However, if the format used provides a space for a carcinogen entry, one must be made since no blank spaces may be present on the MSDSs.

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The MSDSs must include a telephone number for emergency information. There is no requirement that the responsible party staff a telephone line with personnel who can respond to an emergency 24 hours a day. The hours of emergency line operation are determined by the chemical manufacturer and should be set after considering the thoroughness of the MSDSs, the hazards of the chemicals, the frequency of use and immediacy of information needs, and the availability of information through alternative sources. One effective alternative used by some suppliers is to have a telephone answering machine that is on when the facility is closed. The message refers callers to the appropriate official in the event of an emergency.

- (g)(3) The standard requires that all blocks on a form be completed. Because the standard is performance-oriented, however, employers are free to develop MSDSs in any format they wish (as long as it contains the required information). Computer-generated MSDSs do not have to include fields which do not apply to the chemicals for which it is being used.
- (g)(4) Where the evidence can support the fact that a class or family of chemicals presents similar health hazards, it would be appropriate to report those findings on the MSDSs with respect to the entire class or family. Thus, a "generic" MSDSs may address a group of complex mixtures, such as crude oil or natural gas, which have similar hazards and characteristics because their chemical ingredients are essentially the same even though the specific composition varies in each mixture.
- (g)(5) Paragraph (g)(5) requires new or significant information to be added to the MSDSs within three months. The Air Contaminants Rule, 29 CFR 1910.1000, was promulgated January 19, 1989, and set new PELs for 164 substances not previously regulated by OSHA and lowered the PELs for 212 substances. These new PELs must appear on the MSDSs. The "old" PELs, referred to as the "transitional limits," air contaminant limits which must be met via the use of engineering controls, may also appear on the MSDSs, but as "new or significant" information regarding

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the hazard of a chemical, the new PELs must now be included on the MSDSs.

Citations for incomplete or inaccurate MSDSs/labels shall include an abatement requirement for the transmittal of corrected MSDSs/labels to all customers with the next shipment of the chemical.

- (g)(6) This paragraph contains the obligation for an employer to obtain the MSDSs as soon as possible if it was not provided with the shipment. It is not necessary for the employer to perform a hazard determination but only to request the MSDSs. If the container label indicates a hazard, the employer will know an MSDSs is necessary.
- (g)(6) and (g)(7) Chemical manufacturers and importers have an affirmative duty to provide MSDSs to distributors and employers. Thus, a chemical manufacturer and/or importer shall be cited under (g)(6) if they withhold sending MSDSs to downstream users with an initial shipment or with the first shipment after updating an MSDSs, pending a separate payment for the MSDSs. Similarly, under (g)(7), distributors have an affirmative duty to provide MSDSs to other distributors and downstream employers and cannot withhold sending the MSDSs pending separate payment.
- (g)(7) See Definitions (c), in this Appendix, for a discussion of commercial account. Employers purchasing hazardous chemicals from a retail distributor, whose employees will be required to use those chemicals with a greater frequency and duration of exposure than that of regular consumers, must request the MSDS(s) from the retail distributor in order to provide his employees protection under the HCS.
- (g)(8) This provision requires MSDSs or electronically accessible MSDSs to be maintained on site. Readable copy of MSDS(s) must be available on-site. This may be accomplished by the use of computers with printers, microfiche machines, and/or telefax machines, any of which would meet the intent of the standard. The key to compliance with this provision is that employees have no barriers to access to the information and that the MSDSs be available during

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the workshift. When direct and immediate access to paper or hard-copy MSDSs does not exist, CSHOs should evaluate the performance of the employer's system by requesting a specific MSDSs. Mere provision of the requested information orally via telephone is not acceptable.

CSHOs must exercise judgment in enforcing this provision. Factors that may be appropriate to consider when determining if MSDSs are readily accessible may include: Must employees ask a supervisor or other management representative for the MSDSs? Are the sheets or alternative methods maintained at a location and under conditions where employees can refer to them during each workshift, when they are in their work areas? If a computer or FAX system is used, do employees know how to operate and obtain information from the system? Employees must have access to the MSDSs and be able to get the information when they need it, in order for an employer to be in compliance with the rule.

On multi-employer jobsites, employers who produce, use or store hazardous chemicals in such a way that other employers' employees are exposed must also provide copies of or access to MSDSs as discussed in section (e) of this Appendix. Again, actual paper copies of data sheets, computer terminal access, FAX, or other means of providing readable copy on-site are permitted, as long as no barriers to employee access exist.

- (g) (9) If employees work at more than one site during the shift, they must be able to immediately obtain the MSDSs information in an emergency. While the MSDSs may be maintained at a central location in the primary workplace facility, a representative of the employer must be available at that central location to respond to requests for emergency information via telephone or other means.
- (g) (10) Computerized data sheets are permitted as long as they are readily accessible to employees (i.e., employees have been trained and know how to operate the computers or otherwise access the MSDSs files). Many larger firms use terminals in plant and train key employees to access them. This is acceptable,

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as long as the information can be obtained during any work shift, as required by the HCS. Similarly, the use of telefax machines to obtain MSDSs is acceptable as long as the system is reliable and readily accessible while employees are in their work areas during all work shifts.

Employee Information and Training.

- (h) Employees are to be trained at the time they are assigned to work with a hazardous chemical. The intent of this provision is to have information prior to exposure to prevent the occurrence of adverse health effects. This purpose cannot be met if training is delayed until a later date.

Additional training is to be done whenever a new hazard is introduced into the work area, not a new chemical. For example, if a new solvent is brought into the workplace, and it has hazards similar to existing chemicals for which training has already been conducted, then no new training is required. Of course, the substance-specific data sheet must be available, and the product must be properly labeled. If the newly introduced solvent is a suspect carcinogen, and there has never been a carcinogenic hazard in the workplace before, then new training for carcinogen hazards must be conducted in the work areas where employees will be exposed to it.

Complete retraining of an employee does not automatically have to be conducted when an employer hires a new employee, if the employee has received prior training by a past employer, an employee union, or any other entity. It is highly unlikely that no additional training will be needed since employees will need to know the specifics of their new employers' programs such as where the MSDSs are located and details of the employer's in-plant labeling system, if appropriate.

If it is determined that an employee has not received training or is not adequately trained, the current employer will be held responsible regardless of who provided the training to the employee. An employer, therefore, has a responsibility to evaluate an employee's level of knowledge with regard to the training and information requirements of the standard, and the

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employer's own hazard communication program, including previous training the employee may have received. The training requirements also apply if the employer becomes aware via the multi-employer worksite provision of exposure of his employees to hazards for which they have not been previously trained.

Training need not be conducted on each specific chemical found in the workplace, but may be conducted by categories of hazard (e.g., carcinogens, sensitizers, acutely toxic agents) that are or may be encountered by an employee during the course of his duties. This approach to training may be especially useful when training employees about the types of hazards they may encounter at another employer's worksite.

A frequently overlooked portion of the training provisions is that dealing with emergency procedures. If the chemical is very hazardous, more information would be expected to be provided on the MSDSs and, therefore, the training for emergency procedures, including information about the characteristics of the chemical and precautions to be taken would need to be more extensive. Section 1910.1200(h) requires training of employees on (among other things) the measures employees can take to protect themselves from hazards including emergency procedures and an explanation of the information on the MSDSs. Section (g)(2)(viii) of the HCS requires the MSDSs to address safe handling and use of chemicals which includes cleanup of spills and leaks. Section (g)(2)(x) requires the MSDSs to address emergency and first aid procedures.

Questions have arisen regarding the interface of 1910.120 training requirements for emergency procedures and those for the HCS. The scope and extent of training regarding emergency procedures will necessarily be dependent upon the desired response of employees to an emergency. If the employer intends to merely evacuate the work area, the training in emergency procedures would be quite simple and limited but should include information on the emergency alarm system in use at the worksite and evacuation routes and areas where applicable. However, if the employees are expected to take appropriate action to moderate or control the impact of the emergency in a similar fashion as emergency responders would, then additional training will be required. At a minimum, training these responders on the "emergency procedures"

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- required under section (h) should include, as applicable, leak and spill cleanup procedures, appropriate PPE, decontamination procedures, shut-down procedures, recognizing and reporting unusual circumstances (incidents), and where to go (evacuate to) in an emergency.

Giving an employee a data sheet to read does not satisfy the intent of the standard with regard to training. The training is to be a forum for explaining to employees not only the hazards of the chemicals in their work area, but also how to use the information generated in the hazard communication program. This can be accomplished in many ways (audiovisuals, classroom instruction, interactive video), and should include an opportunity for employees to ask questions to ensure that they understand the information presented to them.

Furthermore, the training must be comprehensible. If the employees must receive job instructions in a language other than English, then training and information will probably also need to be conducted in a foreign language.

Trade Secrets.

- (1)(2) The designation of an incident as a "medical emergency" is left to the discretion of the treating physician or nurse.

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Appendix B

Sample Letter, MSDS/Label Query

Dear (Name or Position of Responsible Employer Representative):

Representatives of the Occupational Safety and Health Administration (OSHA)/or State plan designated agency recently visited/or corresponded with (company name), which purchases the following chemical(s) from your company:

(List chemicals, products)

OPTION 1: At the time of the visit, (company name) did not have Material Safety Data Sheets (MSDS)/labels for these products despite their prior request for it.

OPTION 2: At the time of the visit, Material Safety Data Sheets (MSDS)/labels supplied by your company were found to be deficient. (Describe the specific deficiencies.)

You are required under OSHA's Hazard Communication Standard (29 CFR 1910.1200) or your State's right-to-know law to perform hazard determinations, label containers, and provide the MSDS for all hazardous chemicals which you produce or import. A copy of the standard is provided for your reference. Please immediately send properly completed material safety data sheets/labels for the chemicals listed above to your customer and a copy to me. If this information is not received within 30 days, an inspection of your establishment may be conducted.

If the MSDS/label described above was deficient, you are also required to send revised copies to all of your customers with the first shipment after a MSDS/label is revised.

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Thank you for your assistance. If you have any questions regarding this matter, please feel free to contact me at (insert telephone number).

Sincerely,

Area Director

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Appendix C

Hazard Evaluation Procedures

The hazard evaluation procedures required by the standard are performance-oriented. Basically, OSHA's concern is that the information on labels and data sheets, and in the training program, is adequate and accurate. Although specific procedures to follow and number of sources to be consulted cannot be established, general guidance can be provided. The hazard evaluation process can be characterized as a "tiered" approach--the extent to which a chemical must be evaluated depends to a large degree upon the common knowledge regarding the chemical, whether its health effects are under review, and how prevalent it is in the workplace.

1. The first step for CSO's evaluating chemicals is to determine whether the chemical is part of the "floor" of chemicals to be considered hazardous in all situations.
 - a. The floor of chemicals consists of three sources. They are as follows:
 - (1) Any substance for which OSHA has a permissible exposure limit (PEL) in 1910.1000, or a comprehensive substance-specific standard in Subpart Z. This includes any compound of such substances where OSHA would sample to determine compliance with the PEL.
 - (2) Any substance for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a Threshold Limit Value (TLV) in the latest edition of their annual list is to be included in the Hazard Communication Program. Any mixture or combination of these substances would also be included.
 - (3) Any substance which the National Toxicology Program (NTP) or the International Agency for Research on Cancer (IARC) has found to be a suspect or confirmed carcinogen or which OSHA regulates as a carcinogen is to be included in the Hazard Communication Program.

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- b. Sources to generally establish hazards of the chemicals that are part of the floor of hazardous chemicals covered by the standard:

The OSHA Chemical Information Manual, OSHA Instruction CPL 2-2.43, October 20, 1987.

NIOSH/OSHA Occupational Health Guidelines.

Documentation for the Threshold Limit Values.

NTP Summary of the Annual Report on Carcinogens.

IARC Monographs.

In addition, the CSO should check the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS) to see if any hazards are indicated which do not appear in these sources. If there are, further study should be done to evaluate the hazards. RTECS should never be considered a definitive source for establishing a hazard since it consists of data that has not been evaluated. It is, however, a useful screening resource.

2. The second step is to consult other generally available sources to see what has been published regarding the chemical. Patty's Industrial Hygiene and Toxicology would be one such source. OCIS contains a number of other chemical information sources. Material Safety Data Sheets available through information services would also be useful.
3. The third step, for those chemicals where information is not readily available or where such available information is not complete, is to perform searches of bibliographic data bases. In general, the National Library of Medicine (NLM) services should be used. These include the Toxicology Data Bank (TDB), TOXLINE, and MEDLARS. The information generated by these data bases should be evaluated using the criteria in Appendix B of the HCS; i.e., to qualify as an acceptable study, it must be conducted according to scientific principles (e.g., in animal studies, number of subjects is adequate to do statistical analyses of the results; control group is used, and the study must show statistically significant

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results indicating an adverse health effect). This evaluation obviously requires a subjective, professional assessment. Any questions should be referred to the Directorate of Compliance Programs, Office of Health Compliance Assistance (through the Regional Office) for assistance. In general, uncorroborated case reports and in vitro studies, such as Ames tests, are useful pieces of information, but not definitive findings of hazards. Animal studies involving species other than those indicated in the acute hazard definitions must be evaluated as well. The acute hazard definitions are not included in the standard to "categorize" chemicals but rather to establish that chemicals meeting those definitions fall under the coverage of the standard.

4. In some cases, the only information available on a substance may be employer-generated data. If the employer indicates that such information is the basis for the hazard evaluation, the CSHO shall ask to see it to complete the OSHA evaluation.
5. In cases where the employer denies the CSHO access to its own hazard data and no published data on the chemical can be found to review the sufficiency of the hazard determination, the Regional Office shall be contacted for assistance in obtaining an administrative subpoena. The Directorate of Compliance Programs shall be contacted if assistance is required in order to obtain unpublished chemical hazard information available from other Federal agencies such as Environmental Protection Agency.
6. If an employer has found any chemical to be non-hazardous, and the CSHO has reason to believe it is hazardous, further investigation is required. The definitions of hazard in the standard are very broad, and it is not expected that many chemicals can be considered nonhazardous under this approach. Those most likely to be exempted would be chemicals that pose no physical hazards, and which have lethal dose findings above the limits found in the acute hazard definitions.
7. In some cases, the employer may not have addressed in the Hazard Communication Program a specific chemical that the CSHO knows to be present through knowledge of the process or through sampling or other investigation of the workplace. This situation should also be further investigated. If the CSHO has information to indicate

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. that there is a hazard, the employer must be able to
defend the finding of no hazard.

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Appendix D

Guide for Reviewing MSDS Completeness

NOTE: This guide has been developed for use as an optional aid during inspections.

During CSHO review for Material Safety Data Sheet completeness, the following questions may be helpful:

1. Do chemical manufacturers and importers have an MSDS for each hazardous chemical produced or imported into the United States?
2. Do employers have an MSDS for each hazardous chemical used?
3. Is each MSDS in at least English?
4. Does each MSDS contain at least the:
 - (a) Identity used on the label?
 - (b) Chemical and common name(s) for single substance hazardous chemicals?
 - (c) For mixtures tested as a whole:
 - (1) Chemical and common name(s) of the ingredients which contribute to the known hazards?
 - (2) Common name(s) of the mixture itself?
 - (d) For mixtures not tested as a whole:
 - (1) Chemical and common name(s) of all ingredients which are health hazards (1 percent concentration or greater), including carcinogens (0.1 percent concentration or greater)?
 - (2) Chemical and common name(s) of all ingredients which are health hazards and present a risk to employees, even though they are present in the

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mixture in concentrations of less than 1 percent or 0.1 percent for carcinogens?

- (e) Chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture?
- (f) Physical and chemical characteristics of the hazardous chemical (vapor pressure, flash point, etc.)?
- (g) Physical hazards of the hazardous chemical including the potential for fire, explosion, and reactivity?
- (h) Health hazards of the hazardous chemical (including signs and symptoms and medical conditions aggravated)?
- (i) Primary routes of entry?
- (j) OSHA permissible exposure limit (PEL)? The American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV)? Other exposure limit(s) (including ceiling and other short term limits)?
- (k) Information on carcinogen listings (reference OSHA regulated carcinogens, those indicated in the National Toxicology Program (NTP) Annual Report on Carcinogens and/or those listed by the International Agency for Research on Carcinogens (IARC))?

NOTE: Negative conclusions regarding carcinogenicity, or the fact that there is no information, do not have to be reported unless there is a specific space or blank for carcinogenicity on the form.

- (l) Generally applicable procedures and precautions for safe handling and use of the chemical (hygienic practices, maintenance and spill procedures)?
- (m) Generally applicable control measures (engineering controls, work practices and personal protective equipment)?
- (n) Pertinent emergency and first aid procedures?

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- (o) Date that the MSDS was prepared or the date of the last change?
 - (p) Name, address and telephone number of the responsible party?
5. Are all sections of the MSDS completed?