

HAZARD COMMUNICATION PROGRAM

MONSANTO TEXAS CITY

NOVEMBER 15, 1985

SC

12012

LAM012956

TABLE OF CONTENTS

HC-1-1	Introduction/Copy of Standard
HC-2-1	Workplace List of Hazardous Chemicals
HC-2-2	Work Area List/Hazard Evaluation Procedure
HC-3-1	Material Safety Data Sheets
HC-4-1	Labeling Guidelines
HC-5-1	Container Identification Table
HC-6-1	Routine Work Practices
HC-7-1	Non-Routine Work Practices
HC-8-1	Contractor Education
HC-9-1	Personal Protective Equipment
HC-10-1	Industrial Hygiene Policies
HC-11-1	Emergency Procedures
HC-12-1	Training Program

SC

12014

LAM012958

I. INTRODUCTION

The contents of this book represent the Monsanto Texas City Hazard Communication Program, as mandated by the publication of OSHA's Hazard Communication Final Rule in the Federal Register on November 25, 1983. The written sections represent information included in the Texas City training and education program for Texas City.

The purpose of the new OSHA Federal Standard is to ensure that the hazards of all chemicals manufactured or received in this workplace are evaluated, and that information concerning their hazards is communicated to our employees, customers and contractors.

No one piece of paper can define or describe how the employees of this location are trained and educated on their jobs. Training and education result from the communication of the information contained in this book to all employees in a meaningful way that ensures employee understanding.

All employees, new and old, are told of their rights under this standard. They are told that they have the right to know about the substances with which they work and to which they are exposed and how to protect themselves. They are told about this list of substances in the workplace and work area, the location of the lists, the hazards of the operations, the existence and availability of Material Safety Data Sheets and where they are located (copies are made available as requested). The contents of Material Safety Data Sheets are used as further raw material to train and educate our employees.

A copy of the new standard and summary is contained in this manual for easy reference. A summary of Monsanto's procedure for evaluating hazardous substances is contained and described to all employees. Also included are guidelines used by Monsanto to develop its Material Safety Data Sheets (MSDS).

The Hazard Communication and Training/Education Program also includes reference to existing written procedures for vessel-entry (for cleaning and repairs), maintenance on pipes and process equipment that may be unmarked (where employee exposure may possibly occur), lockout procedures, special sampling, loading and unloading procedures if they are nonroutine. Other plant operating procedures exist that are not necessarily included here as part of this program.

SC 12015

ORIGINAL ISSUE: 11/15/85 REVISED: PAGE 1 OF 3

LAM012959

This program further includes a description of how information is passed to contractors to ensure that their employees are adequately trained and warned of hazards that they may be exposed to on our property.

Our employees are told how we label and identify hazardous substances in our workplace. They are told how to reference an identity in the workplace with the corresponding Material Safety Data Sheet for more detailed information. Some process equipment and piping systems may be labeled and some not. Where no visible markings exist, employees will have access to operating instructions, batch tickets, process flow diagrams, process procedures, postings, charts, placards, etc., to give them the necessary health and safety information.

Our employees are told about the methods and observations used to detect the presence of hazardous substances in the workplace and where industrial hygiene programs exist. Employees are told what personal protective equipment is available, where located and how to use it to protect themselves.

Special emergency procedures, such as hurricane preparation, evacuation, and fire/spill alarms, exist for the Texas City plant that are explained to all employees. In addition, emergency information is available on each individual MSDS to cover fire-fighting, spill disposal and first aid.

In cases where Monsanto has elected not to publicly record the exact chemical identity of a substance on a Material Safety Data Sheet or on a container label, we make note of this exception on the MSDS. We do show a trade name, product name or common name in all cases. The MSDS includes all other information concerning hazards and health effects. Monsanto will support the need for protecting its proprietary business information as necessary.

Throughout our Hazard Communication Education and Training Program we have tried to apply the intent of the standard - communicate information about the hazards of substances in the workplace to our employees.

To judge our compliance, we ask that an observer ask one question if some specific label or warning or piece of paper is not readily apparent - ask if an employee has ready access somewhere in the workplace to all the information required by the standard - available in one form or another? If the employee has all of this knowledge available to him, we judge that we are in compliance with this OSHA Standard. An observer should be able to make this same judgement by reviewing this Hazard Communication Package.

HAZARD COMMUNICATION
DEPARTMENT:

TEXAS CITY PLANT
HC-1-1

Specific sections follow providing detailed information on the
Hazard Communication Program elements summarized above.

SC 12017

LAM012961

ORIGINAL ISSUE: 11/15/85 REVISED: PAGE 3 OF 3

Friday
November 25, 1983

Part IV

Department of Labor

Occupational Safety and Health
Administration

Hazard Communication; Final Rule

IV. Summary and Explanation of the Standard

The following is a paragraph-by-paragraph summary of the provisions of the final standard:

(a) *Purpose.* In the final standard, a paragraph has been added to specify what OSHA intends to accomplish through promulgation of the standard. In essence, the paragraph states that the final Hazard Communication standard is intended to ensure that all employees in the manufacturing sector, Standard Industrial Classification (SIC) Codes 20 through 39, are apprised of the hazards they work with through a hazard communication program. This program is to include container labeling material safety data sheets, and employee training.

The paragraph goes on to state that OSHA intends to comprehensively address the issue of evaluating and communicating chemical hazards to employees in the manufacturing sector in this standard, and to preempt any state law pertaining to this subject. Thus if a state wishes to regulate in this area, it can only do so if the standard is approved by OSHA under section 18(b) of the Act which deals with state plans.

This preemption will serve to reduce the burden on interstate commerce produced by conflicting state and local regulations and will ensure that all employees in the manufacturing sector are accorded the same degree of protection. OSHA will examine carefully any state requests to regulate in this area to determine any potentially burdensome impact on interstate commerce as well as to ascertain whether there is a compelling need for a separate regulation.

(b) *Scope and application.* The final hazard communication standard applies to employers and employees in the manufacturing SIC Codes, 20 through 39. The manufacturers in these SIC codes who produce chemicals for use or distribution, and importers of such chemicals, must evaluate the hazards of these substances. All employers in the manufacturing sector must establish a hazard communication program for their employees. In addition, distributors of hazardous chemicals are required to transmit hazard information to their manufacturing sector customers.

The proposed standard also applied to the manufacturing SIC codes. As discussed elsewhere in this preamble, OSHA has concluded that the need for hazard communication is greatest in the manufacturing sector, and is exercising its priority setting authority by choosing to regulate this segment of industry at this time, and reserving the right to separately regulate other segments in the future.

The scope of the final standard has been expanded to cover importers and distributors. The rulemaking record indicated that in order for the flow of hazard information from upstream manufacturers to downstream users to be continuous and effective, all aspects of the supply chain have to be specifically included in the scope of the standard. Thus, in the final standard importers are required to supply the same information as domestic manufacturers of a hazardous chemical. Distributors are to ensure the downstream flow of information by shipping labeled containers and making an appropriate material safety data sheet available to downstream purchasers.

The standard also applies only to chemicals which are known to be present in the workplace and to which employees may be exposed under normal conditions of use or in a foreseeable emergency. This means that employers must assess and communicate the hazards of any such chemicals, but do not have to analyze complex chemical mixtures in the

workplace to determine the precise composition and components. That is, the term "known" means the employee need not analyze intermediate process streams, for example, to determine the presence of quantity of trace contaminants. However, where the employer knows of such contaminants, and they are hazardous, then they fall under the provisions of the standard.

There are a number of laboratories in the manufacturing facilities covered by this standard, and they receive different treatment in terms of hazard communication requirements. Employers are to ensure that labels on incoming containers of hazardous chemicals are not removed or defaced. Furthermore, any material safety data sheets received with such chemicals are to be maintained, and accessible to employees. Employers are also to ensure that laboratory employees are apprised of the hazards of the chemicals they work with in accordance with the training provisions of this standard. In all other respects laboratories in the covered SIC Codes are exempt from the provisions of the hazard communication standard. For example, employers need not label every container used in the laboratory with an identity and hazard warning as would otherwise be required.

The standard also exempts potentially hazardous chemicals that are brought into the workplace for the personal consumption of employees, such as foods, drugs, cosmetics or tobacco products.

The standard also included specific labeling exemptions for chemicals which are regulated by other Federal agencies, and total exemptions for certain classes of substances which are not expected to be hazardous for purposes of this standard.

(c) *Definitions.* The final standard includes a number of definitions which provide the framework to determine which employers are covered by the standard; what substances are covered by the standard; how the standard defines hazards; and how OSHA defines other key terms for purposes of the standard, such as what constitutes a trade secret. Since a number of these definitions are unique to this standard, they should be consulted to ensure that the provisions are properly understood.

The standard applies to several different groups of businesses, in varying degrees of coverage. All of the hazard communication provisions apply to "employers" who are defined as businesses within SIC Codes 20 through 39 where chemicals are "either used, or are produced for use or distribution." "Produce" means to "manufacture,

process, formulate, or repackage." "Use" means to "produce, handle, react, or transfer." Those "employers" who "produce" chemicals for "use or distribution" are considered to be "chemical manufacturers," and thus have additional hazard evaluation duties to perform.

The standard also requires "importers" to evaluate the hazards of chemicals. An importer "receives hazardous chemicals produced in other countries for the purpose of supplying them to distributors or manufacturing purchasers within the United States." "Distributors" supply "hazardous chemicals to other distributors or to manufacturing purchasers." "Manufacturing purchasers" are "employers" who purchase a hazardous chemical for use within a workplace in SIC Codes 20 through 39.

The standard applies to any chemical which is known to be present in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency. A "chemical" is broadly defined as "any element, chemical compound, or mixture of elements and/or compounds."

"Articles" are excluded under the scope of the standard from being covered as a "chemical." A mixture is defined as "any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction". "Exposure" occurs when an employee may inhale, ingest, or absorb a hazardous chemical during the course of employment. The definition includes both potential and current "exposure." A "foreseeable emergency" is one which employers would normally plan for as a presumed potential occurrence, determined by the nature of the operation, i.e. equipment failure or rupture of containers.

The standard applies to both "physical" and "health" hazards. Each of these terms is defined by listing the various types of "physical" and "health" hazards covered. These listed hazards are then individually defined, or in the case of "health" hazards, further explained in Appendix A.

If a "container" of a hazardous chemical is present in, or leaves the workplace, it must be labeled with an "identity" and "hazard warning." A "container" is anything that holds hazardous chemicals except pipes and piping systems. A "label" is any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals. An "identity" is any name used on the material safety data sheet for the chemical, and on the list of hazardous chemicals in the workplace. The name used should permit cross-

references to be made among these three items. The "hazard warning" conveys the hazards of the chemical(s) in the container to employees. This message may be conveyed by words, symbols, pictures, or any combination thereof.

(d) *Hazard determination.* A new paragraph has been added to the final standard to separate out and highlight the provisions concerning the determination of what constitutes a hazard for purposes of the standard.

The primary duty for hazard evaluation lies with the chemical manufacturers and importers of hazardous chemicals. Under the provisions of this paragraph, they are required to evaluate the chemicals they produce or import in their workplaces to determine if they are hazardous. Employers may rely on the evaluation performed by the chemical manufacturer or importer for chemicals they use within their workplaces to satisfy this requirement.

The chemical manufacturers, importers, or employers are to be held accountable for the quality of the hazard determinations they perform. Each chemical is to be evaluated for its potential to cause adverse health effects, as well as its potential to pose physical hazards, such as flammability. The particular health and physical hazards to be considered are enumerated in the definition for a "hazardous chemical." Additional definitions are provided for the terms used in the definition for a hazardous chemical. The specific physical hazards are also defined in the definitions paragraph. The health hazard definitions are contained in Appendix A. Appendixes A and B are integral parts of this hazard determination paragraph.

Appendix A contains a discussion of the difficulty in definitively identifying all possible health effects, and indicates the broad approach the standard intends in its coverage of such effects. It further provides specific definitions for certain acute hazards, such as "corrosive" and "sensitizer." In addition, the Appendix includes a target organ categorization of health effects which gives examples of signs and symptoms of exposure as well as indications of substances which have been found to affect the target organ. This information is also provided to indicate the broad scope of health hazards to be covered. Essentially, the employer must report any adverse health effect for which there is scientific (i.e. statistically significant) evidence based on at least one positive study conducted in accordance with established scientific principles, that it

may occur as a result of employee exposure.

Appendix B provides further guidance to the employer in terms of the criteria to be applied in determining whether or not a chemical is hazardous for purposes of the standard. As examples of evidence to be considered, OSHA indicates that both human and animal data must be evaluated. Furthermore, if an available study indicates that an adverse health effect is likely to occur, and that study is conducted according to scientific principles and results in statistically significant findings, the employer is required to report it whether he agrees with the finding or not. Employers are free to report such findings in a non-conclusionary fashion, i.e. they don't have to agree with it, but they do have to report it. Employers may also report any negative data they believe is relevant to the hazard potential of the chemical. An additional Appendix C lists a number of sources which are available for employers in their search for information on hazards.

The hazard determination paragraph also includes two provisions which establish certain substances as being hazardous chemicals in any occupational setting. These substances are those currently regulated by OSHA under 29 CFR Part 1910, General Industry Standards, and those listed by the American Conference of Governmental Industrial Hygienists (ACGIH) in their latest edition of the *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment*. This provision establishes a "floor" of over 600 substances to be communicated to employees.

In addition, OSHA has defined a carcinogen for purposes of communication of hazards as any substance found to be a confirmed or suspected carcinogen by the International Agency for Research on Cancer, the National Toxicology Program, or OSHA. Use of these sources should eliminate much controversy involved in defining and identifying carcinogens. The hazard determination paragraph (d) also addresses the coverage of hazardous chemicals which are mixtures. Mixture coverage is divided into several considerations. First of all, if the employer has objective test data on the mixture as an entity, that data must be used to determine the hazards. If such data are not available for the health hazard determination, then the employer must consider the mixture to have the health hazards of those components which comprise one percent or more of the total composition.

If any of the components are carcinogens, the mixture must be considered to be carcinogenic if the component is present in concentrations of 0.1% or more.

If the mixture has not been objectively evaluated to determine its physical hazard potential, the employer may use whatever scientifically valid information is available to subjectively assess the potential hazards.

Finally, if the employer has evidence to indicate that a component which comprises less than one percent of the mixture could be released in concentrations which would exceed an established permissible exposure limit under normal conditions of use, it must be identified. Furthermore, if the employer has reason to believe that the component could be released in quantities hazardous to the health of employees, it shall also be identified even though present in quantities less than one percent of the total weight or volume, or less than 0.1% in the case of a carcinogen. The procedures used to evaluate hazards must be prepared in writing. The written description may be included in the written hazard communication program required under paragraph (e).

(e) *Written hazard communication program.* The final standard requires each employer to establish a comprehensive hazard communication program for their employees, which includes at least the mandated container labeling, material safety data sheets, and an employee training program. The program is to be written, and is to include how the employer plans to meet the criteria of the standard regarding labels, material safety data sheets, and training; a list of the hazardous chemicals in each work area, the methods the employer will use to inform employees of the hazards of non-routine tasks, as well as of the hazards associated with chemicals contained in unlabeled pipes in their work areas; and the methods employers will use to inform contractors in manufacturing facilities of the hazards to which their employees may be exposed.

The written program need not be lengthy or complicated, but should adequately address each of the required components in the program. Some employers already have aspects of their existing hazard communication programs in written form. These need not be modified to comply with this requirement as long as they address the minimal criteria established in the standard.

The written program is to be made available to employees, their designated

representatives, the Assistant Secretary for OSHA and the Director of NIOSH.

(f) *Labels and other forms of warning.* Chemical manufacturers, importers and distributors are required to ensure that containers of hazardous chemicals leaving the workplace are labeled, tagged or marked with the identity, appropriate hazard warnings, and the name and address of the manufacturer or other responsible party. Additionally, they are to ensure that these labels do not conflict with those applied in accordance with Department of Transportation regulations under the Hazardous Materials Transportation Act. If labels already applied by the manufacturer, importer, or distributor contain the minimal information required by OSHA, additional labels need not be affixed.

The final standard requires that each container in the workplace be labeled, tagged or marked with the identity of hazardous chemicals contained therein, and hazard warnings appropriate for employee protection. The term "identity" is defined for purposes of this standard as being any designation the employer chooses to use, as long as it also appears on the list of hazardous chemicals for the work area, and on the associated material safety data sheet. The hazard warning is to be any type of message, words, pictures, or symbols, which convey the hazards of the chemical(s) in the container. The employer is responsible for selecting the message and ensuring that it is effective for the purpose involved.

OSHA recognizes that container labeling may be difficult, or in some cases impractical, to accomplish within a plant. Therefore, several exemptions to in-plant individual container labels have been included in the final standard. If there are a number of stationary containers within a work area which have similar contents and hazards, the employer may post signs or placards which convey the hazard information required rather than individually labeling each piece of equipment. Employers may also use various types of standard operating procedures, process sheets, batch tickets, blend tickets, or other such written materials as substitutes for individual container labels on stationary process equipment. However, these written materials must contain the same information as is required on the labels, and must be readily accessible to workers in the work areas. This requirement does not apply to pipes or piping systems, which are exempted altogether from the labeling requirements.

One additional exemption is included for in-plant containers. Employers are not required to label portable containers, into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer. According to the definition of immediate use, the container must be under the control of the employee performing the transfer, and used within the workshift when the transfer has been made, for the exemption to apply.

The standard also requires that employers ensure that labels on incoming containers of hazardous chemicals are not removed or defaced, unless they are immediately replaced with another label with the required information. In addition, labels are to be legible, in English and prominently displayed on the container. Employers may add information in other languages as well, as long as the message also appears in English.

(g) *Material safety data sheets.* The final standard requires chemical manufacturers and importers to develop material safety data sheets for each hazardous chemical they produce or import. Employers are required to obtain or develop a material safety data sheet for each hazardous chemical used in their workplaces.

Specific requirements are included for the information to be provided on the MSDS. Such information is to be in English, and includes the identity, as well as chemical and common names, for the hazardous chemical. Special provisions apply to the listing of ingredients for hazardous chemicals which are mixtures. For physical hazards, the employer is to list those ingredients which he or she has determined present a physical hazard. For health hazards, the employer must list each component which comprises 1% or more, and which is itself a health hazard. Any chemical which is determined to be a carcinogen must be listed if it is present in quantities of 0.1% or greater. Employers must also list ingredients present in concentrations of less than one percent if there is evidence that the permissible exposure limit may be exceeded or if it could present a health hazard in those concentrations.

In addition to identity information, the employer must provide information specified on the physical and chemical characteristics of the hazardous chemical, known acute and chronic health effects and related health information, as well as information concerning exposure limits, whether the chemical is considered to be a carcinogen by NTP, IARC, or OSHA,

precautionary measures, emergency and first aid procedures, and identification of the person responsible for the sheet.

In some situations, employers may have more than one complex mixture in the workplace which have similar contents and hazards. For example, petroleum streams have essentially the same chemical components, but may vary slightly in concentrations of these components. The hazards are essentially the same. Employers may prepare one MSDS for all of these similar mixtures in order to comply with the provisions of this standard.

If a manufacturer or importer cannot find the appropriate information to complete a specified category, then the MSDS must be marked to indicate that no information was found. In other words, the employer must not leave blank spaces on the sheets which would then be open to interpretation as to the significance of not having an entry in them. If the category is not applicable to the chemical involved, the space should be marked to indicate that as well.

The chemical manufacturer, importer or employer is to ensure that the MSDS accurately reflects the scientific evidence which formed the basis for the determination that the chemical in question is hazardous. The chemical manufacturers, importers, and employers should remain aware of the development of new and significant information regarding the potential health hazard of a chemical in their workplace. When they do obtain such information, they must add it to the MSDS within three months. If the chemical is not being produced at the time of the information is discovered, the information need not be entered onto the MSDS until the chemical is reintroduced into the workplace, and thus employees are potentially exposed.

An MSDS is to be provided to manufacturing purchasers of hazardous chemicals with their first shipment. Providing an MSDS does not imply that the sheet need be physically attached to the shipment. It may be transmitted by mail, through a computer link-up, or in any other effective manner the manufacturer chooses. When an MSDS is updated, the new version must be transmitted to the manufacturing purchaser with the next shipment. Although the chemical manufacturers and importers have a positive duty to provide such information, there may be situations where the MSDS is lost or misplaced. If one is not received as anticipated, the manufacturing purchaser must make efforts to obtain one as soon as possible.

Distributors are responsible for ensuring that manufacturing purchasers

of their hazardous chemicals are provided an appropriate MSDS. This may be accomplished by providing an MSDS prepared by the producer of the chemical.

Copies of the MSDSs for hazardous chemicals in a given work area are to be readily accessible to employees in that work area. In order for the MSDS to serve as a source of detailed information on hazards, it must be located close to workers, and readily available to them during each workshift.

As was the case with labels, alternatives to MSDSs within a plant are also permitted as long as they provide the appropriate information, and are readily accessible to employees. These would be expected to take the form of written operating procedures, manuals, etc. The employer may also use this alternative approach to address the hazards of a process, rather than individual chemicals. However, information must still be available to employees for each hazardous chemical involved.

MSDSs are to be made available to employees and their designated representatives, the Assistant Secretary and the Director. They must be maintained in a current fashion, and need not be retained for any specified period of time beyond that, except to the extent required by the Employee Access to Exposure and Medical Records rule, 29 CFR 1910.20.

(h) *Employee information and training.* Employers are to establish a training and information program for employees exposed to hazardous chemicals. Such training is to be provided at the time of initial assignment, and whenever a new hazard is introduced in their work area. Of course, any employees who have not been trained previously must receive training equivalent to the required initial assignment training when this standard takes effect.

The standard specifies the information to be transmitted to employees. First they are to be informed of the requirements of this regulation, i.e., that it exists, that employers are required to have hazard communication programs, and the components of the programs in their workplaces. Employees are also to be informed of any operations in their work area where hazardous chemicals are present, and where the employer will be keeping the written materials required under this standard, including the written hazard evaluation procedures, written program, lists of hazardous chemicals, and MSDSs required by this section.

Employees are also to be trained regarding methods and observations they may use to detect the presence of a hazardous chemical in their work area. For example, employees should be informed of the visual appearance or smell of the chemicals they may be exposed to, so they will know when they are being released into the work atmosphere. Employees are also to be trained specifically about the hazards of the chemicals in their work areas. This may be done by specific chemical or by categories of hazards, but in any case, the employee is to be aware that information is available on the specific hazards of individual chemicals through the material safety data sheets. Training is to include the measures employees can take to protect themselves from the hazards, and is to indicate the specific procedures implemented by the employer to provide protection, such as work practices and the use of personal protective equipment. In addition, the employer is to explain the hazard communication program implemented in that workplace, including how to read and interpret information on labels and material safety data sheets, and how employees can obtain and use the available hazard information.

(i) *Trade secrets.* OSHA recognizes in the final standard that specific chemical identity information can constitute a *bona fide* trade secret, and thus provisions are made to protect such an identity while providing for the proper protection of exposed employees. This is accomplished by providing for limited trade secret disclosure to health professionals under prescribed conditions of need and confidentiality. The term "specific chemical identity" is used to describe the trade secret information being discussed. This term refers to the chemical name, the Chemical Abstracts Services (CAS) Registry Number, or any other specific information which reveals the precise chemical designation. It does not include common names.

The proposed standard did not include a definition for the term "trade secret," although OSHA stated that the Agency considered the definition derived from the Restatement of Torts to be the appropriate one. In response to comments suggesting that the definition be explicitly stated in the final standard, a slightly modified version of that definition has been added to clarify what the Agency considers to be a trade secret for purposes of this standard.

Given that it is recognized that the specific chemical identity of a chemical may be a trade secret, the standard establishes an information disclosure

scheme which requires the release of essential hazard information, and defines the terms under which the specific chemical identity must also be released.

The chemical manufacturer, importer or employer is permitted to withhold the specific chemical identity from the MSDS if certain conditions can be met: (1) The chemical manufacturer, importer or employer can support the claim that the information withheld is a trade secret; (2) information concerning the properties and effects of the hazardous chemical is disclosed as required on the appropriate material safety data sheet; (3) the chemical manufacturer, importer, or employer indicates on the MSDS that the specific chemical identity is being withheld as a trade secret; and (4) the specific chemical identity is made available to health professionals under certain specified situations. Health professionals are considered to be physicians, Industrial hygienists, toxicologists, or any other person providing medical or other occupational health services to exposed employees.

The final standard's provisions make a distinction between the trade secret disclosure requirements in the event of a medical emergency and in non-emergency situations.

In the case of a medical emergency, the chemical manufacturer, importer, or employer must immediately disclose the specific chemical identity of a hazardous chemical to a treating physician or nurse when the information is needed for proper emergency or first aid treatment. As soon as circumstances permit, however, the chemical manufacturer, importer, or employer may obtain a written statement of need and a confidentiality agreement as provided for below.

OSHA considers it to be appropriate for the treating physician or nurse to have the ultimate responsibility for determining that a medical emergency exists. At the time of the medical emergency, their professional judgment regarding the situation must form the basis for triggering the immediate disclosure requirement. Although there will undoubtedly be situations which, when viewed in retrospect, do not appear to be genuine emergencies, OSHA has determined that the short-term necessity for appropriate emergency treatment far outweighs the risk of unnecessary disclosure of secret information. Since the chemical manufacturer, importer, or employer can require a written statement of need and a confidentiality agreement to be completed after the emergency is abated, further disclosure of the trade

secret can be effectively controlled. If a chemical manufacturer, importer or employer refuses to provide specific chemical identity information in the event of a medical emergency, OSHA regulations would provide appropriate enforcement remedies.

In drafting the medical emergency disclosure requirement, OSHA considered whether to allow the chemical manufacturer, importer, or employer to suggest alternatives to disclosure of the type stated in the provisions for non-emergency situations (paragraph (i)(7)(v)). However, OSHA determined that the emergency nature of the situation addressed necessitates disclosure of the specific chemical identity immediately without the opportunity for the chemical manufacturers, importer or employer to explore possible suitable alternatives with the treating physician or nurse.

In non-emergency situations, chemical manufacturers, importers, or employers are required to disclose the withheld specific chemical identity to health professionals providing medical or other occupational health services to exposed employees if certain conditions are met. The concept of "health professional" is more broadly stated than for emergency situations, and includes any physicians, industrial hygienists, toxicologists, or epidemiologists who provide these medical or other occupational health services to exposed employees. Nurses are not included among the health professionals entitled to access to specific chemical identities in non-emergency situations. OSHA has determined that it is more appropriate, given the competing interests balanced in this standard, to entrust such information to the physician to whom a nurse would normally report. The request for information must be in writing, and must describe with reasonable detail the medical or occupational health need for the information. To be considered a medical or occupational health need for purposes of this standard, the health professional must be planning to use the specific chemical identity information for one or more of the following activities:

1. To assess the hazards of the chemicals to which employees will be exposed.
2. To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels.
3. To conduct pre-assignment or periodic medical surveillance of exposed employees.
4. To provide medical treatment to

exposed employees.

5. To select or assess appropriate personal protective equipment for exposed employees.
6. To design or assess engineering controls or other protective measures for exposed employees.
7. To conduct studies to determine the health effects of exposure.

It should be noted that for purposes of this standard, exposure includes potential, as well as current, exposure situations. Thus the health professionals will be able to obtain the necessary information prior to the actual exposure of employees, and can implement preventive measures to avoid the occurrence of health effects.

In addition, the written request must also explain in detail why the disclosure of the specific chemical identity is essential to providing the occupational health services, and why disclosure of the following types of information would not satisfy the health professional's need:

1. Properties and effects of the chemical.
2. Measures for controlling workers' exposure to the chemical.
3. Methods of monitoring and analyzing worker exposure to the chemical.
4. Methods of diagnosing and treating harmful exposures to the chemical.

OSHA anticipates that in many situations this alternative information will be sufficient to satisfy the health professional's needs.

The request for the information must further provide a description of the procedures to be used to protect the confidentiality of the information. An agreement not to use the information for any purpose other than the health need asserted or to release it under any circumstances other than to OSHA must also be included, and signed by the health professional as well as the employer or contractor of the health professional's services. The requirement that the employer or contractor of the health professional's services be a co-signatory to the agreement applies equally regardless of whether the health professional is providing occupational health or medical services to a downstream employer, labor organization, or individual employees, and regardless of whether the health professional is being paid for his services. This makes explicit that both the principal and the agent are legally responsible for compliance with the agreement, although only the health professional may actually have access to the specific chemical identity information.

The provisions of the confidentiality agreement may not include requiring the posting of a penalty bond. It may restrict use of the information to the purposes indicated in the statement of need, prohibit disclosure to anyone other than OSHA who has not signed an agreement, and provide for appropriate legal remedies, including stipulation of a reasonable pre-estimate of likely damages. Nothing in the standard is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.

If the health professional decides there is a need to disclose the information to OSHA, the chemical manufacturer, importer, or employer who provided the information must be informed by the health professional prior to, or at the same time as, such disclosure.

If the chemical manufacturer, importer, or employer denies the written request for information, the denial must also be in writing, and be provided to the health professional within thirty days of the request. The denial must provide evidence to support the claim that the chemical identity is a trade secret, state the specific reasons why the request is being denied, and explain in detail how alternative information may satisfy the occupational health need without revealing the specific chemical identity.

The requesting health professional who still needs the information may then refer the matter to OSHA for consideration. The original request, as well as the written denial, must be provided to OSHA at the time of this referral. OSHA will review these documents to determine whether the chemical manufacturer, importer, or employer has supported the claim that the specific chemical identity is a trade secret, and that the health professional has demonstrated a medical or occupational health need for the information, as well as adequate means to protect the confidentiality of the information.

If OSHA determines that the specific chemical identity is not a trade secret, the employer will be subject to citation. Similarly, the employer will be subject to citation if the specific chemical identity is a trade secret, but the requesting health professional has demonstrated a medical or occupational health need, executed a confidentiality agreement, and has shown adequate means for complying with the terms of the confidentiality agreement. Abatement of the citation will most likely be to divulge the specific chemical identity subject to the confidentiality agreement. However, consistent with

the power given to the Secretary in Section 15 of the Act, if the chemical manufacturer, importer, or employer demonstrates to OSHA that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret chemical identity, the Assistant Secretary may issue such orders or impose such additional limitations or conditions upon disclosure as may be appropriate to assure that the occupational health services are provided without an undue risk of harm to the chemical manufacturer, importer, or employer. It is contemplated that the Assistant Secretary would personally review and approve such orders, limitations or conditions. If the employer continues to withhold the requested information after a citation has been issued, the contested citation will go to the Occupational Safety and Health Review Commission (OSHRC) for adjudication.

In accordance with OSHRC rules, The Administrative Law Judge (ALJ) from OSHRC may decide to review the matter *in camera*. At all stages of the proceeding, the normal OSHRC and judicial review procedures will be followed.

As a further clarification of the disclosure requirements of the final standard, the provisions specifically exclude trade secret processes or percentage of mixture information from disclosure. This is the type of information which is most likely to be trade secret and least likely to be of medical or occupational health interest. OSHA recognizes that, in rare cases, process information (such as where an intermediate hazardous chemical is not present in the final product) or even percentage of mixture information (such as for antidote treatment) may be necessary in an emergency situation. OSHA believes that responsible chemical manufacturers, importers, or employers will appropriately respond to such emergencies. Thus such information was not included in the concept of specific chemical identity.

The chemical manufacturer, importer or employer is required to divulge to the Assistant Secretary or designee any information required under this standard. However, the chemical manufacturer, importer, or employer may claim trade secret status at the time the information is provided, and the Assistant Secretary will make the necessary arrangements to ensure protection of such trade secrets, in accordance with the provisions of

section 15 of the Act and Agency procedures.

(j) *Effective dates.* The effective dates of the final standard are structured according to activity; that is, information being sent downstream must be prepared first, then other provisions of the hazard communication program are to be complied with by a later date. Chemical manufacturers and importers have two years in which to comply with the labeling of containers shipped downstream, and to provide material safety data sheets to manufacturing purchasers. Distributors must also begin transferring information downstream by this initial compliance date. All employers must be in compliance with all provisions of the standard within 2½ years.

V. Authority, Signature and the Standard

This document was prepared under the direction of Thorne G. Auchter, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, D.C. 20210. Pursuant to Sections 8(b) and 8(g) of the Act, 29 CFR is hereby amended by adding a new § 1910.1200 to read as set forth below.

List of Subjects in 29 CFR Part 1910

Occupational safety and health,
Hazard communication.

(Sec. 8(b), 8(c), and 8(g). Pub. L. 91-596, 84 Stat. 1593, 1599, 1600; 29 U.S.C. 655, 657; 29 CFR Part 1911; Secretary of Labor's Order No. 9-83 (48 FR 35736))

Signed at Washington, D.C. this 21st day of November 1983.

Thorne G. Auchter,
Assistant Secretary for Occupational Safety
and Health.

PART 1910—[AMENDED]

Subpart 2 of Part 1910 of Title 29 of the Code of Federal Regulations (CFR) is hereby amended by adding a new § 1910.1200 to read as follows:

§ 1910.1200 Hazard communication.

(a) *Purpose.* (1) The purpose of this section is to ensure that the hazards of all chemicals produced or imported by chemical manufacturers or importers are evaluated, and that information concerning their hazards is transmitted to affected employers and employees within the manufacturing sector. This transmittal of information is to be accomplished by means of comprehensive hazard communication programs, which are to include container labeling and other forms of warning, material safety data sheets and employee training.

(2) This occupational safety and health standard is intended to address comprehensively the issue of evaluating and communicating chemical hazards to employees in the manufacturing sector, and to preempt any state law pertaining to this subject. Any state which desires to assume responsibility in this area may only do so under the provisions of § 18 of the Occupational Safety and Health Act (29 U.S.C. 651 et seq.) which deals with state jurisdiction and state plans.

(b) *Scope and application.* (1) This section requires chemical manufacturers or importers to assess the hazards of chemicals which they produce or import, and all employers in SIC Codes 20 through 39 (Division D, Standard Industrial Classification Manual) to provide information to their employees about the hazardous chemicals to which they are exposed, by means of a hazard communication program, labels and other forms of warning, material safety data sheets, and information and training. In addition, this section requires distributors to transmit the required information to employers in SIC Codes 20-39.

(2) This section applies to any chemical which is known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

(3) This section applies to laboratories only as follows:

(i) Employers shall ensure that labels on incoming containers of hazardous chemicals are not removed or defaced;

(ii) Employers shall maintain any material safety data sheets that are received with incoming shipments of hazardous chemicals, and ensure that they are readily accessible to laboratory employees; and

(iii) Employers shall ensure that laboratory employees are apprised of the hazards of the chemicals in their workplaces in accordance with paragraph (h) of this section.

(4) This section does not require labeling of the following chemicals:

(i) Any pesticide as such term is defined in the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.), when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Environmental Protection Agency;

(ii) Any food, food additive, color additive, drug, or cosmetic, including materials intended for use as ingredients in such products (e.g., flavors and fragrances), as such terms are defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) and regulations issued under that Act, when

they are subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Food and Drug Administration;

(iii) Any distilled spirits (beverage alcohols), wine, or malt beverage intended for nonindustrial use, as such terms are defined in the Federal Alcohol Administration Act (27 U.S.C. 201 et seq.) and regulations issued under that Act, when subject to the labeling requirements of that Act and labeling regulations issued under that Act by the Bureau of Alcohol, Tobacco, and Firearms; and

(iv) Any consumer product or hazardous substance as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 2051 et seq.) and Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) respectively, when subject to a consumer product safety standard or labeling requirement of those Acts, or regulations issued under those Acts by the Consumer Product Safety Commission.

(5) This section does not apply to:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. 6901 et seq.), when subject to regulations issued under that Act by the Environmental Protection Agency;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) Articles; and

(v) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace.

(c) *Definitions.* "Article" means a manufactured item: (i) Which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which does not release, or otherwise result in exposure to, a hazardous chemical under normal conditions of use.

"Assistant Secretary" means the Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, or designee.

"Chemical" means any element, chemical compound or mixture of elements and/or compounds.

"Chemical manufacturer" means an employer in SIC Codes 20 through 39 with a workplace where chemical(s) are produced for use or distribution.

"Chemical name" means the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS)

rules of nomenclature, or a name which will clearly identify the chemical for the purpose of conducting a hazard evaluation.

"Combustible liquid" means any liquid having a flashpoint at or above 100°F (37.8°C), but below 200°F (93.3°C), except any mixture having components with flashpoints of 200°F (93.3°C), or higher, the total volume of which make up 99 percent or more of the total volume of the mixture.

"Common name" means any designation or identification such as code name, code number, trade name, brand name or generic name used to identify a chemical other than by its chemical name.

"Compressed gas" means:

(i) A gas or mixture of gases having, in a container, an absolute pressure exceeding 40 psi at 70°F (21.1°C); or

(ii) A gas or mixture of gases having, in a container, an absolute pressure exceeding 104 psi at 130°F (54.4°C) regardless of the pressure at 70°F (21.1°C); or

(iii) A liquid having a vapor pressure exceeding 40 psi at 100°F (37.8°C) as determined by ASTM D-323-72.

"Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems are not considered to be containers.

"Designated representative" means any individual or organization to whom an employee gives written authorization to exercise such employee's rights under this section. A recognized or certified collective bargaining agent shall be treated automatically as a designated representative without regard to written employee authorization.

"Director" means the Director, National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services, or designee.

"Distributor" means a business, other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to manufacturing purchasers.

"Employee" means a worker employed by an employer in a workplace in SIC Codes 20 through 39 who may be exposed to hazardous chemicals under normal operating conditions or foreseeable emergencies, including, but not limited to production workers, line supervisors, and repair or maintenance personnel. Office workers, grounds maintenance personnel, security personnel or non-resident management are generally not included, unless their job performance routinely

involves potential exposure to hazardous chemicals.

"Employer" means a person engaged in a business within SIC Codes 20 through 39 where chemicals are either used, or are produced for use or distribution.

"Explosive" means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

"Exposure" or "exposed" means that an employee is subjected to a hazardous chemical in the course of employment through any route of entry (inhalation, ingestion, skin contact or absorption, etc.), and includes potential (e.g., accidental or possible) exposure.

"Flammable" means a chemical that falls into one of the following categories:

(i) "Aerosol, flammable" means an aerosol that, when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening, or a flashback (a flame extending back to the valve) at any degree of valve opening;

(ii) "Gas, flammable" means:

(A) A gas that, at ambient temperature and pressure, forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or

(B) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit;

(iii) "Liquid, flammable" means any liquid having a flashpoint below 100°F (37.8°C), except any mixture having components with flashpoints of 100°F (37.8°C) or higher, the total of which make up 99 percent or more of the total volume of the mixture.

(iv) "Solid, flammable" means a solid other than a blasting agent or explosive as defined in § 1910.109(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard. A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.

"Flashpoint" means the minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite when tested as follows:

(i) Tagliabue Closed Tester (See American National Standard Method of Test for Flash Point by Tag Closed

Tester, Z11.24-1979 (ASTM D 56-79)) for liquids with a viscosity of less than 45 Saybolt Universal Seconds (SUS) at 100°F (37.8°C), that do not contain suspended solids and do not have a tendency to form a surface film under test; or

(ii) Pensky-Martens Closed Tester (see American National Standard Method of Test for Flash Point by Pensky-Martens Closed Tester, Z11.7-1979 (ASTM D 93-79)) for liquids with a viscosity equal to or greater than 45 SUS at 100°F (37.8°C), or that contain suspended solids, or that have a tendency to form a surface film under test; or

(iii) Setaflash Closed Tester (see American National Standard Method of Test for Flash Point by Setaflash Closed Tester (ASTM D 3278-78)).

Organic peroxides, which undergo autoaccelerating thermal decomposition, are excluded from any of the flashpoint determination methods specified above.

"Foreseeable emergency" means any potential occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical into the workplace.

"Hazard warning" means any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning which convey the hazards of the chemical(s) in the container(s).

"Hazardous chemical" means any chemical which is a physical hazard or a health hazard.

"Health hazard" means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes. Appendix A provides further definitions and explanations of the scope of health hazards covered by this section, and Appendix B describes the criteria to be used to determine whether or not a chemical is to be considered hazardous for purposes of this standard.

"Identity" means any chemical or common name which is indicated on the material safety data sheet (MSDS) for the chemical. The identity used shall permit cross-references to be made

among the required list of hazardous chemicals, the label and the MSDS.

"Immediate use" means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

"Importer" means the first business with employees within the Customs Territory of the United States which receives hazardous chemicals produced in other countries for the purpose of supplying them to distributors or manufacturing purchasers within the United States.

"Label" means any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

"Manufacturing purchaser" means an employer with a workplace classified in SIC Codes 20 through 39 who purchases a hazardous chemical for use within that workplace.

"Material safety data sheet (MSDS)" means written or printed material concerning a hazardous chemical which is prepared in accordance with paragraph (g) of this section.

"Mixture" means any combination of two or more chemicals if the combination is not, in whole or in part, the result of a chemical reaction.

"Organic peroxide" means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

"Oxidizer" means a chemical other than a blasting agent or explosive as defined in § 1910.109(a), that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

"Physical hazard" means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

"Produce" means to manufacture, process, formulate, or repackage.

"Pyrophoric" means a chemical that will ignite spontaneously in air at a temperature of 130° F (54.4° C) or below.

"Responsible party" means someone who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

"Specific chemical identity" means the chemical name, Chemical Abstracts Service (CAS) Registry Number, or any other information that reveals the

precise chemical designation of the substance.

"Trade secret" means any confidential formula, pattern, process, device, information or compilation of information (including chemical name or other unique chemical identifier) that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it.

"Unstable (reactive)" means a chemical which in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks pressure or temperature.

"Use" means to package, handle, react, or transfer.

"Water-reactive" means a chemical that reacts with water to release a gas that is either flammable or presents a health hazard.

"Work area" means a room or defined space in a workplace where hazardous chemicals are produced or used, and where employees are present.

"Workplace" means an establishment at one geographical location containing one or more work areas.

(d) *Hazard determination.* (1) Chemical manufacturers and importers shall evaluate chemicals produced in their workplaces or imported by them to determine if they are hazardous. Employers are not required to evaluate chemicals unless they choose not to rely on the evaluation performed by the chemical manufacturer or importer for the chemical to satisfy this requirement.

(2) Chemical manufacturers, importers or employers evaluating chemicals shall identify and consider the available scientific evidence concerning such hazards. For health hazards, evidence which is statistically significant and which is based on at least one positive study conducted in accordance with established scientific principles is considered to be sufficient to establish a hazardous effect if the results of the study meet the definitions of health hazards in this section. Appendix A shall be consulted for the scope of health hazards covered, and Appendix B shall be consulted for the criteria to be followed with respect to the completeness of the evaluation, and the data to be reported.

(3) The chemical manufacturer, importer or employer evaluating chemicals shall treat the following sources as establishing that the chemicals listed in them are hazardous:

(i) 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA); or,

(ii) *Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment*, American Conference of Governmental Industrial Hygienists (ACGIH) (latest edition).

The chemical manufacturer, importer, or employer is still responsible for evaluating the hazards associated with the chemicals in these source lists in accordance with the requirements of the standard.

(4) Chemical manufacturers, importers and employers evaluating chemicals shall treat the following sources as establishing that a chemical is a carcinogen or potential carcinogen for hazard communication purposes:

(i) National Toxicology Program (NTP), *Annual Report on Carcinogens* (latest edition);

(ii) International Agency for Research on Cancer (IARC) *Monographs* (latest editions); or

(iii) 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration.

Note.—The *Registry of Toxic Effects of Chemical Substances* published by the National Institute for Occupational Safety and Health indicates whether a chemical has been found by NTP or IARC to be a potential carcinogen.

(5) The chemical manufacturer, importer or employer shall determine the hazards of mixtures of chemicals as follows:

(i) If a mixture has been tested as a whole to determine its hazards, the results of such testing shall be used to determine whether the mixture is hazardous;

(ii) If a mixture has not been tested as a whole to determine whether the mixture is a health hazard, the mixture shall be assumed to present the same health hazards as do the components which comprise one percent (by weight or volume) or greater of the mixture, except that the mixture shall be assumed to present a carcinogenic hazard if it contains a component in concentrations of 0.1 percent or greater which is considered to be a carcinogen under paragraph (d)(4) of this section;

(iii) If a mixture has not been tested as a whole to determine whether the mixture is a physical hazard, the chemical manufacturer, importer, or employer may use whatever scientifically valid data is available to evaluate the physical hazard potential of the mixture; and

(iv) If the employer has evidence to indicate that a component present in the mixture in concentrations of less than

one percent (or in the case of carcinogens, less than 0.1 percent) could be released in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health hazard to employees in those concentrations, the mixture shall be assumed to present the same hazard.

(6) Chemical manufacturers, importers, or employers evaluating chemicals shall describe in writing the procedures they use to determine the hazards of the chemical they evaluate. The written procedures are to be made available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director. The written description may be incorporated into the written hazard communication program required under paragraph (e) of this section.

(e) *Written hazard communication program.* (1) Employers shall develop and implement a written hazard communication program for their workplaces which at least describes how the criteria specified in paragraphs (f), (g), and (h) of this section for labels and other forms of warning, material safety data sheets, and employee information and training will be met, and which also includes the following:

(i) A list of the hazardous chemicals known to be present using an identity that is referenced on the appropriate material safety data sheet (the list may be compiled for the workplace as a whole or for individual work areas);

(ii) The methods the employer will use to inform employees of the hazards of non-routine tasks (for example, the cleaning of reactor vessels), and the hazards associated with chemicals contained in unlabeled pipes in their work areas; and,

(iii) The methods the employer will use to inform any contractor employers with employees working in the employer's workplace of the hazardous chemicals their employees may be exposed to while performing their work, and any suggestions for appropriate protective measures.

(2) The employer may rely on an existing hazard communication program to comply with these requirements, provided that it meets the criteria established in this paragraph (e).

(3) The employer shall make the written hazard communication program available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director, in accordance with the requirements of 29 CFR 1910.20(e).

(f) *Labels and other forms of warning.* (1) The chemical manufacturer, importer, or distributor shall ensure that each

container of hazardous chemicals leaving the workplace is labeled, tagged or marked with the following information:

(i) Identity of the hazardous chemical(s);

(ii) Appropriate hazard warnings; and

(iii) Name and address of the chemical manufacturer, importer, or other responsible party.

(2) Chemical manufacturers, importers, or distributors shall ensure that each container of hazardous chemicals leaving the workplace is labeled, tagged, or marked in accordance with this section in a manner which does not conflict with the requirements of the Hazardous Materials Transportation Act (18 U.S.C. 1801 et seq.) and regulations issued under that Act by the Department of Transportation.

(3) If the hazardous chemical is regulated by OSHA in a substance-specific health standard, the chemical manufacturer, importer, distributor or employer shall ensure that the labels or other forms of warning used are in accordance with the requirements of that standard.

(4) Except as provided in paragraphs (f)(5) and (f)(6) the employer shall ensure that each container of hazardous chemicals in the workplace is labeled, tagged, or marked with the following information:

(i) Identity of the hazardous chemical(s) contained therein; and

(ii) Appropriate hazard warnings.

(5) The employer may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys the information required by paragraph (f)(4) of this section to be on a label. The written materials shall be readily accessible to the employees in their work area throughout each work shift.

(6) The employer is not required to label portable containers into which hazardous chemicals are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

(7) The employer shall not remove or deface existing labels on incoming containers of hazardous chemicals, unless the container is immediately marked with the required information.

(8) The employer shall ensure that labels or other forms of warning are legible, in English, and prominently displayed on the container, or readily available in the work area throughout each work shift. Employers having

employees who speak other languages may add the information in their language to the material presented, as long as the information is presented in English as well.

(9) The chemical manufacturer, importer, distributor or employer need not affix new labels to comply with this section if existing labels already convey the required information.

(g) *Material safety data sheets.* (1) Chemical manufacturers and importers shall obtain or develop a material safety data sheet for each hazardous chemical they produce or import. Employers shall have a material safety data sheet for each hazardous chemical which they use.

(2) Each material safety data sheet shall be in English and shall contain at least the following information:

(i) The identity used on the label, and, except as provided for in paragraph (f) of this section on trade secrets:

(A) If the hazardous chemical is a single substance, its chemical and common name(s);

(B) If the hazardous chemical is a mixture which has been tested as a whole to determine its hazards, the chemical and common name(s) of the ingredients which contribute to these known hazards, and the common name(s) of the mixture itself; or,

(C) If the hazardous chemical is a mixture which has not been tested as a whole:

(1) The chemical and common name(s) of all ingredients which have been determined to be health hazards, and which comprise 1% or greater of the composition, except that chemicals identified as carcinogens under paragraph (d)(4) of this section shall be listed if the concentrations are 0.1% or greater; and,

(2) The chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture;

(ii) Physical and chemical characteristics of the hazardous chemical (such as vapor pressure, flash point);

(iii) The physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity;

(iv) The health hazards of the hazardous chemical, including signs and symptoms of exposure, and any medical conditions which are generally recognized as being aggravated by exposure to the chemical;

(v) The primary route(s) of entry;

(vi) The OSHA permissible exposure limit, ACGIH Threshold Limit Value, and any other exposure limit used or

recommended by the chemical manufacturer, importer, or employer preparing the material safety data sheet, where available;

(vii) Whether the hazardous chemical is listed in the National Toxicology Program (NTP) *Annual Report on Carcinogens* (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) *Monographs* (latest editions), or by OSHA;

(viii) Any generally applicable precautions for safe handling and use which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for clean-up of spills and leaks;

(ix) Any generally applicable control measures which are known to the chemical manufacturer, importer or employer preparing the material safety data sheet, such as appropriate engineering controls, work practices, or personal protective equipment;

(x) Emergency and first aid procedures;

(xi) The date of preparation of the material safety data sheet or the last change to it; and,

(xii) The name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous chemical and appropriate emergency procedures, if necessary.

(3) If no relevant information is found for any given category on the material safety data sheet, the chemical manufacturer, importer or employer preparing the material safety data sheet shall mark it to indicate that no applicable information was found.

(4) Where complex mixtures have similar hazards and contents (i.e. the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture), the chemical manufacturer, importer or employer may prepare one material safety data sheet to apply to all of these similar mixtures.

(5) The chemical manufacturer, importer or employer preparing the material safety data sheet shall ensure that the information recorded accurately reflects the scientific evidence used in making the hazard determination. If the chemical manufacturer, importer or employer becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new

information shall be added to the material safety data sheet within three months. If the chemical is not currently being produced or imported the chemical manufacturer or importer shall add the information to the material safety data sheet before the chemical is introduced into the workplace again.

(6) Chemical manufacturers or importers shall ensure that distributors and manufacturing purchasers of hazardous chemicals are provided an appropriate material safety data sheet with their initial shipment, and with the first shipment after a material safety data sheet is updated. The chemical manufacturer or importer shall either provide material safety data sheets with the shipped containers or send them to the manufacturing purchaser prior to or at the time of the shipment. If the material safety data sheet is not provided with the shipment, the manufacturing purchaser shall obtain one from the chemical manufacturer, importer, or distributor as soon as possible.

(7) Distributors shall ensure that material safety data sheets, and updated information, are provided to other distributors and manufacturing purchasers of hazardous chemicals.

(8) The employer shall maintain copies of the required material safety data sheets for each hazardous chemical in the workplace, and shall ensure that they are readily accessible during each work shift to employees when they are in their work area(s).

(9) Material safety data sheets may be kept in any form, including operating procedures, and may be designed to cover groups of hazardous chemicals in a work area where it may be more appropriate to address the hazards of a process rather than individual hazardous chemicals. However, the employer shall ensure that in all cases the required information is provided for each hazardous chemical, and is readily accessible during each work shift to employees when they are in their work area(s).

(10) Material safety data sheets shall also be made readily available, upon request, to designated representatives and to the Assistant Secretary, in accordance with the requirements of 29 CFR 1910.20(e). The Director shall also be given access to material safety data sheets in the same manner.

(h) *Employee information and training.* Employers shall provide employees with information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

(1) *Information.* Employees shall be informed of:

(i) The requirements of this section;

(ii) Any operations in their work area where hazardous chemicals are present; and,

(iii) The location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and material safety data sheets required by this section.

(2) *Training.* Employee training shall include at least:

(i) Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);

(ii) The physical and health hazards of the chemicals in the work area;

(iii) The measures employees can take to protect themselves from these hazards, including specific procedures the employer has implemented to protect employees from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and,

(iv) The details of the hazard communication program developed by the employer, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

(i) *Trade secrets.* (1) The chemical manufacturer, importer or employer may withhold the specific chemical identity, including the chemical name and other specific identification of a hazardous chemical, from the material safety data sheet, provided that:

(i) The claim that the information withheld is a trade secret can be supported;

(ii) Information contained in the material safety data sheet concerning the properties and effects of the hazardous chemical is disclosed;

(iii) The material safety data sheet indicates that the specific chemical identity is being withheld as a trade secret; and,

(iv) The specific chemical identity is made available to health professionals, in accordance with the applicable provisions of this paragraph.

(2) Where a treating physician or nurse determines that a medical emergency exists and the specific chemical identity of a hazardous chemical is necessary for emergency or first-aid treatment, the chemical

manufacturer, importer, or employer shall immediately disclose the specific chemical identity of a trade secret chemical to that treating physician or nurse, regardless of the existence of a written statement of need or a confidentiality agreement. The chemical manufacturer, importer, or employer may require a written statement of need and confidentiality agreement, in accordance with the provisions of paragraphs (i) (3) and (4) of this section, as soon as circumstances permit.

(3) In non-emergency situations, a chemical manufacturer, importer, or employer shall, upon request, disclose a specific chemical identity, otherwise permitted to be withheld under paragraph (i)(1) of this section, to a health professional (i.e. physician, industrial hygienist, toxicologist, or epidemiologist) providing medical or other occupational health services to exposed employee(s) if:

(i) the request is in writing;
(ii) The request describes with reasonable detail one or more of the following occupational health needs for the information:

(A) To assess the hazards of the chemicals to which employees will be exposed;

(B) To conduct or assess sampling of the workplace atmosphere to determine employee exposure levels;

(C) To conduct pre-assignment or periodic medical surveillance of exposed employees;

(D) To provide medical treatment to exposed employees;

(E) To select or assess appropriate personal protective equipment for exposed employees;

(F) To design or assess engineering controls or other protective measures for exposed employees; and,

(G) To conduct studies to determine the health effects of exposure.

(iii) The request explains in detail why the disclosure of the specific chemical identity is essential and that, in lieu thereof, the disclosure of the following information would not enable the health professional to provide the occupational health services described in paragraph (ii) of this section:

(A) The properties and effects of the chemical;

(B) Measures for controlling workers' exposure to the chemical;

(C) Methods of monitoring and analyzing worker exposure to the chemical; and,

(D) Methods of diagnosing and treating harmful exposures to the chemical;

(iv) The request includes a description of the procedures to be used to maintain

the confidentiality of the disclosed information; and,

(v) The health professional, and the employer or contractor of the health professional's services (i.e., downstream employer, labor organization, or individual employer), agree in a written confidentiality agreement that the health professional will not use the trade secret information for any purpose other than the health need(s) asserted and agree not to release the information under any circumstances other than to OSHA, as provided in paragraph (i)(6) of this section, except as authorized by the terms of the agreement or by the chemical manufacturer, importer, or employer.

(4) The confidentiality agreement authorized by paragraph (i)(3)(iv) of this section:

(i) May restrict the use of the information to the health purposes indicated in the written statement of need;

(ii) May provide for appropriate legal remedies in the event of a breach of the agreement, including stipulation of a reasonable pre-estimate of likely damages; and,

(iii) May not include requirements for the posting of a penalty bond.

(5) Nothing in this standard is meant to preclude the parties from pursuing non-contractual remedies to the extent permitted by law.

(6) If the health professional receiving the trade secret information decides that there is a need to disclose it to OSHA, the chemical manufacturer, importer, or employer who provided the information shall be informed by the health professional prior to, or at the same time as, such disclosure.

(7) If the chemical manufacturer, importer, or employer denies a written request for disclosure of a specific chemical identity, the denial must:

(i) Be provided to the health professional within thirty days of the request;

(ii) Be in writing;

(iii) Include evidence to support the claim that the specific chemical identity is a trade secret;

(iv) State the specific reasons why the request is being denied; and,

(v) Explain in detail how alternative information may satisfy the specific medical or occupational health need without revealing the specific chemical identity.

(8) The health professional whose request for information is denied under paragraph (i)(3) of this section may refer the request and the written denial of the request to OSHA for consideration.

(9) When a health professional refers the denial to OSHA under paragraph

(i)(8) of this section, OSHA shall consider the evidence to determine if:

(i) The chemical manufacturer, importer, or employer has supported the claim that the specific chemical identity is a trade secret;

(ii) The health professional has supported the claim that there is a medical or occupational health need for the information; and,

(iii) The health professional has demonstrated adequate means to protect the confidentiality.

(10) (i) If OSHA determines that the specific chemical identity requested under paragraph (i)(3) of this section is not a *bona fide* trade secret, or that it is a trade secret but the requesting health professional has a legitimate medical or occupational health need for the information, has executed a written confidentiality agreement, and has shown adequate means to protect the confidentiality of the information, the chemical manufacturer, importer, or employer will be subject to citation by OSHA.

(ii) If a chemical manufacturer, importer, or employer demonstrates to OSHA that the execution of a confidentiality agreement would not provide sufficient protection against the potential harm from the unauthorized disclosure of a trade secret specific chemical identity, the Assistant Secretary may issue such orders or impose such additional limitations or conditions upon the disclosure of the requested chemical information as may be appropriate to assure that the occupational health services are provided without an undue risk of harm to the chemical manufacturer, importer, or employer.

(11) If, following the issuance of a citation and any protective orders, the chemical manufacturer, importer, or employer continues to withhold the information, the matter is referable to the Occupational Safety and Health Review Commission for enforcement of the citation. In accordance with Commission rules, the Administrative Law Judge may review the citation and supporting documentation *in camera* or issue appropriate protective orders.

(12) Notwithstanding the existence of a trade secret claim, a chemical manufacturer, importer, or employer shall, upon request, disclose to the Assistant Secretary any information which this section requires the chemical manufacturer, importer, or employer to make available. Where there is a trade secret claim, such claim shall be made no later than at the time the information is provided to the Assistant Secretary so that suitable determinations of trade

secret status can be made and the necessary protections can be implemented.

(13) Nothing in this paragraph shall be construed as requiring the disclosure under any circumstances of process or percentage of mixture information which is trade secret.

(j) *Effective dates.* Employers shall be in compliance with this section within the following time periods:

(1) Chemical manufacturers and importers shall label containers of hazardous chemicals leaving their workplaces, and provide material safety data sheets with initial shipments by November 25, 1985.

(2) Distributors shall be in compliance with all provisions of this section applicable to them by November 25, 1985.

(3) Employers shall be in compliance with all provisions of this section by May 25, 1986, including initial training for all current employees.

Appendix A to § 1910.1200—Health Hazard Definitions (Mandatory)

Although safety hazards related to the physical characteristics of a chemical can be objectively defined in terms of testing requirements (e.g. flammability), health hazard definitions are less precise and more subjective. Health hazards may cause measurable changes in the body—such as decreased pulmonary function. These changes are generally indicated by the occurrence of signs and symptoms in the exposed employees—such as shortness of breath, a non-measurable, subjective feeling. Employees exposed to such hazards must be appraised of both the change in body function and the signs and symptoms that may occur to signal that change.

The determination of occupational health hazards is complicated by the fact that many of the effects or signs and symptoms occur commonly in non-occupationally exposed populations, so that effects of exposure are difficult to separate from normally occurring illnesses. Occasionally, a substance causes an effect that is rarely seen in the population at large, such as angiosarcomas caused by vinyl chloride exposure, thus making it easier to ascertain that the occupational exposure was the primary causative factor. More often, however, the effects are common, such as lung cancer. The situation is further complicated by the fact that most chemicals have not been adequately tested to determine their health hazard potential, and data do not exist to substantiate these effects.

There have been many attempts to categorize effects and to define them in

various ways. Generally, the terms "acute" and "chronic" are used to delineate between effects on the basis of severity or duration. "Acute" effects usually occur rapidly as a result of short-term exposures, and are of short duration. "Chronic" effects generally occur as a result of long-term exposure, and are of long duration.

The acute effects referred to most frequently are those defined by the American National Standards Institute (ANSI) standard for Precautionary Labeling of Hazardous Industrial Chemicals (Z129.1-1982)—irritation, corrosivity, sensitization and lethal dose. Although these are important health effects, they do not adequately cover the considerable range of acute effects which may occur as a result of occupational exposure, such as, for example, narcosis.

Similarly, the term chronic effect is often used to cover only carcinogenicity, teratogenicity, and mutagenicity. These effects are obvious a concern in the workplace, but again, do not adequately cover the area of chronic effects, excluding, for example, blood dyscrasias (such as anemia), chronic bronchitis and liver atrophy.

The goal of defining precisely, in measurable terms, every possible health effect that may occur in the workplace as a result of chemical exposures cannot realistically be accomplished. This does not negate the need for employees to be informed of such effects and protected from them.

Appendix B, which is also mandatory, outlines the principles and procedures of hazard assessment.

For purposes of this section, any chemicals which meet any of the following definitions, as determined by the criteria set forth in Appendix B are health hazards:

1. *Carcinogen:* A chemical is considered to be a carcinogen if:

(a) It has been evaluated by the International Agency for Research on Cancer (IARC), and found to be a carcinogen or potential carcinogen; or
(b) It is listed as a carcinogen or potential carcinogen in the *Annual Report on Carcinogens* published by the National Toxicology Program (NTP) (latest edition); or,
(c) It is regulated by OSHA as a carcinogen.

2. *Corrosive:* A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact. For example, a chemical is considered to be corrosive if, when tested on the intact skin of albino rabbits by the method described by the U.S. Department of Transportation in Appendix A to 49 CFR

Part 173, it destroys or changes irreversibly the structure of the tissue at the site of contact following an exposure period of four hours. This term shall not refer to action on inanimate surfaces.

3. *Highly toxic:* A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD_{50}) of 50 milligrams or less per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD_{50}) of 200 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours (or less if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC_{50}) in air of 200 parts per million by volume or less of gas or vapor, or 2 milligrams per liter or less of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

4. *Irritant:* A chemical, which is not corrosive, but which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact. A chemical is a skin irritant if, when tested on the intact skin of albino rabbits by the methods of 16 CFR 1500.41 for four hours exposure or by other appropriate techniques, it results in an empirical score of five or more. A chemical is an eye irritant if so determined under the procedure listed in 16 CFR 1500.42 or other appropriate techniques.

5. *Sensitizer:* A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

6. *Toxic:* A chemical falling within any of the following categories:

(a) A chemical that has a median lethal dose (LD_{50}) of more than 50 milligrams per kilogram but not more than 500 milligrams per kilogram of body weight when administered orally to albino rats weighing between 200 and 300 grams each.

(b) A chemical that has a median lethal dose (LD_{50}) of more than 200 milligrams per kilogram but not more than 1,000 milligrams per kilogram of body weight when administered by continuous contact for 24 hours (or less, if death occurs within 24 hours) with the bare skin of albino rabbits weighing between two and three kilograms each.

(c) A chemical that has a median lethal concentration (LC_{50}) in air of

more than 200 parts per million but not more than 2,000 parts per million by volume of gas or vapor, or more than two milligrams per liter but not more than 20 milligrams per liter of mist, fume, or dust, when administered by continuous inhalation for one hour (or less if death occurs within one hour) to albino rats weighing between 200 and 300 grams each.

7. *Target organ effects.* The following

is a target organ categorization of effects which may occur, including examples of signs and symptoms and chemicals which have been found to cause such effects. These examples are presented to illustrate the range and diversity of effects and hazards found in the workplace, and the broad scope employers must consider in this area, but are not intended to be all-inclusive.

chemical manufacturer, importer, or employer may also report the results of other scientifically valid studies which tend to refute the findings of hazard.

Appendix C to § 1900.1200—Information Sources (Advisory)

The following is a list of available data sources which the chemical manufacturer, importer, or employer may wish to consult to evaluate the hazards of chemicals they produce or import:

- Any information in their own company files such as toxicity testing results or illness experience of company employees.
- Any information obtained from the supplier of the chemical, such as material safety data sheets or product safety bulletins.
- Any pertinent information obtained from the following source list (latest editions should be used):

Condensed Chemical Dictionary
Van Nostrand Reinhold Co., 135 West 50th Street, New York, NY 10020

The Merck Index: An Encyclopedia of Chemicals and Drugs

Merck and Company, Inc., 128 E. Lincoln Avenue, Rahway, NJ 07065

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man
Geneva: World Health Organization, International Agency for Research on Cancer, 1972-1977. (Multivolume work), 49 Sheridan Street, Albany, New York

Industrial Hygiene and Toxicology, by F. A. Patty
John Wiley & Sons, Inc., New York, NY (Five volumes)

Clinical Toxicology of Commercial Products
Gleason, Gosselin and Hodge

Casarett and Doull's Toxicology: The Basic Science of Poisons

Doull, Klaassen, and Amdur, Macmillan Publishing Co., Inc., New York, NY

Industrial Toxicology, by Alice Hamilton and Harriet L. Hardy

Publishing Sciences Group, Inc., Acton, MA

Toxicology of the Eye, by W. Morton Grant
Charles C. Thomas, 301-327 East Lawrence Avenue, Springfield, IL

Recognition of Health Hazards in Industry
William A. Burgess, John Wiley and Sons, 605 Third Avenue, New York, NY 10158

Chemical Hazards of the Workplace
Nick H. Proctor and James P. Hughes, J. P. Lipincott Company, 6 Winchester Terrace, New York, NY 10022

Handbook of Chemistry and Physics
Chemical Rubber Company, 18901 Cranwood Parkway, Cleveland, OH 44128

Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes

American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Bldg. D-5, Cincinnati, OH 45217

Note.—The following documents are on sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

a. Hepatotoxic:	Chemicals which produce liver damage.
Signs and Symptoms:	Jaundice; liver enlargement.
Chemicals:	Carbon tetrachloride; nitroamines.
b. Nephrotoxic:	Chemicals which produce kidney damage.
Signs and Symptoms:	Edema; proteinuria.
Chemicals:	Halogenated hydrocarbons; uranium.
c. Neurotoxic:	Chemicals which produce their primary toxic effects on the nervous system.
Signs and Symptoms:	Neurosis; behavioral changes; decrease in motor functions.
Chemicals:	Mercury; carbon disulfide.
d. Agents which act on the blood or hematopoietic system:	Decrease hemoglobin function; deprive the body tissues of oxygen.
Signs and Symptoms:	Cyanosis; loss of consciousness.
Chemicals:	Carbon monoxide; cyanides.
e. Agents which damage the lung:	Chemicals which irritate or damage the pulmonary tissue.
Signs and Symptoms:	Cough; tightness in chest; shortness of breath.
Chemicals:	Silica; asbestos.
f. Reproductive toxin:	Chemicals which affect the reproductive capabilities including chromosomal damage (mutations) and effects on fetuses (teratogenesis).
Signs and Symptoms:	Birth defects; sterility.
Chemicals:	Lead; DBCP.
g. Dermal hazards:	Chemicals which affect the dermal layer of the body.
Signs and Symptoms:	Defolting of the skin; rashes; irritation.
Chemicals:	Kerosene; chlorinated compounds.
h. Eye hazards:	Chemicals which affect the eye or visual capacity.
Signs and Symptoms:	Conjunctivitis; corneal damage.
Chemicals:	Organic solvents; acids.

Appendix B to § 1900.1200—Hazard Determination (Mandatory)

The quality of a hazard communication program is largely dependent upon the adequacy and accuracy of the hazard determination. The hazard determination requirement of this standard is performance-oriented. Chemical manufacturers, importers, and employers evaluating chemicals are not required to follow any specific methods for determining hazards, but they must be able to demonstrate that they have adequately ascertained the hazards of the chemicals produced or imported in accordance with the criteria set forth in this Appendix.

Hazard evaluation is a process which relies heavily on the professional judgment of the evaluator, particularly in the area of chronic hazards. The performance-orientation of the hazard determination does diminish the duty of the chemical manufacturer, importer or employer to conduct a thorough evaluation, examining all relevant data and producing a scientifically defensible evaluation. For purposes of this standard, the following criteria shall be used in making hazard determinations that meet the requirements of this standard.

1. *Carcinogenicity:* As described in paragraph (d)(4) and Appendix A of this section, a determination by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA that a chemical is a carcinogen or potential carcinogen will be considered conclusive evidence for purposes of this section.

2. *Human data:* Where available, epidemiological studies and case reports of adverse health effects shall be considered in the evaluation.

3. *Animal data:* Human evidence of health effects in exposed populations is generally not available for the majority of chemicals produced or used in the workplace. Therefore, the available results of toxicological testing in animal populations shall be used to predict the health effects that may be experienced by exposed workers. In particular, the definitions of certain acute hazards refer to specific animal testing results (see Appendix A).

4. *Adequacy and reporting of data:* The results of any studies which are designed and conducted according to established scientific principles, and which report statistically significant conclusions regarding the health effects of a chemical, shall be a sufficient basis for a hazard determination and reported on any material safety data sheet. The

WOMEN PLACE
HAB. SUBST.
LIST

SC

12032

LAM012976

Workplace List of Hazardous Chemicals

This section contains a comprehensive list of Monsanto products and isolated intermediates, and purchased raw materials and supplies found in the Texas City plant. It is the responsibility of each work area to notify the Safety/Industrial Hygiene Department of new or "no longer used" chemicals in that area so that the list can be kept evergreen. An updated list must be issued at least annually.

SC

12033

LAM012977

Texas City Chemicals List, by Product 11-6-85

MATERIAL	VENDOR	DEPT
#4 Rubber Cement	BF Goodrich	90770
101 Bowl Cleaner	Hunter Chem	90811
101 Bowl Cleaner	Hunter Chem	90770
12-4-12 Soil Control	Kernite	90770
12-4-12 Soil Control	Kernite	90811
12849 Dishwasher Spot Remover	Economics Lab	90770
12849 Dishwasher Spot Remover	Economics Lab	90811
220 Weldfast Part A	Fibercast Comp	90770
220 Weldfast Part B	Fibercast Comp	90770
5 Second Leak Detector	Sherlock	84051
A-101 Spray Cleaner for Floors	3M	90811
A-101 Spray Cleaner for Floors	3M	84050
A-101 Spray Cleaner for Floors	3M	90770
A-101 Spray Cleaner for Floors	3M	84014
A-33 Detergent/Disinfectant	Airwick	90811
A-33 Detergent/Disinfectant	Airwick	93200
A-33 Detergent/Disinfectant	Airwick	90770
ATF Premium Transmission Fluid	Pacer	84014
Accelerator #7	Ametek	90770
Acetaldehyde	Celanese	84025
Acetaldehyde	Kodak	84033
Acetaldehyde	Monsanto	84033
Acetaldehyde	Monsanto	91435
Acetaldehyde	Tennessee Eastman	84025
Acetic ACid	Monsanto	84050
Acetic Acid		84051
Acetic Acid	Fisher	91435
Acetic Acid	JT Baker	91435
Acetic Acid 1:1	MC Control Lab	89954
Acetic Acid Offgas	Monsanto	84050
Acetic Acid/Isopropanol		84048
Acetic Anhydride	Mallinckrodt	91435
Acetone		91435
Acetone		84048
Acetone	Exxon	84025
Acetone	Exxon	93200
Acetone	Exxon	84053
Acetone	Exxon	90811
Acetone	Exxon	84033
Acetone	Exxon	90770
Acetone	Fisher	91435
Acetone	JT Baker	91435
Acetone	Mallinckrodt	91435
Acetone	McKesson	84033
Acetone	McKesson	90811
Acetone	McKesson	84025
Acetone	McKesson	90770
Acetone Cyanohydrin (ACY)	Monsanto	84025
Acetone Cyanohydrin, Crude	Monsanto	84025
Acetonitrile	Aldrich	91435
Acetonitrile	JT Baker	91435
Acetonitrile	Monsanto	84051
Acetylene	Iweco	90770
Acetylene - Welding	Linde - UC	90811

Texas City Chemicals List, by Product 11-6-85

Acrolein	Aldrich	91435
Acrylic Acid	Eastman	91435
Acrylonitrile	Monsanto	91435
Acrylonitrile, Crude	Monsanto	84051
Acrylonitrile, Product	Monsanto	84051
Activated Carbon	Darco	84056
Air Deodorizer Spray		84051
Air, Compressed		84051
Alcohol, C11	Aldrich	91435
Alcohol, C5		91435
Alcohol, C7	Aldrich	91435
Alcohol, C9	Sigma	91435
Alcohols from S6	Monsanto	89954
Aldehyde, Crude	Monsanto	84048
Alizarin Red S	Fisher	91435
Alkali Blue 6B	Matheson, Coleman & Bell	91435
Alkylated Liquor	Monsanto	84014
Alkylated Liquor	Monsanto	89513
Allyl Alcohol	Aldrich	91435
Almatek 1232 Gen Purpose Lubricant		90811
Almatek 1232 Gen Purpose Lubricant		90770
Alum		
Alum	Stauffer Chem	89954
Alumicut Cutting Oil	Stauffer Chem	84051
Alumicut Cutting Oil		90770
Alumicut Cutting Oil		90811
Aluminum (gray)	Aldrich	91435
Aluminum Chloride Solution	Monsanto	84014
Aluminum Chloride Solution	Monsanto	84051
Aluminum Chloride/Muriatic Acid Soln	Monsanto	84014
Aluminum Granules	Alcoa	84014
Aluminum Granules	Alcoa	93200
Aluminum Granules	Almeg	84014
Aluminum Granules	Almeg	93200
Aluminum, 1000 ppm Std	Scientific Products	91435
Amino Acid Reagent 2012	Betz	84025
Amino Acid Reagent 2012	Betz	84044
Amino Acid Reagent 2012	Betz	84051
Amino Acid Reagent 2012	Betz	84014
Amino Acid Reagent 2012	Betz	84033
Amino Powder	M E Co	91435
Amino-4-Nitrophenol, 2-	Aldrich	91435
Aminoantipyrine, 4-	JT Baker	91435
Aminoantipyrine, 4-	Mallinckrodt	91435
Ammonia	American Cyanamide	93200
Ammonia	Mallinckrodt	91435
Ammonia	Monsanto-Luling	84033
Ammonia	Monsanto-Luling	89513
Ammonia	Monsanto-Luling	93200
Ammonia	Triad	93200
Ammonia, Anhy	Monsanto-Luling	84051
Ammonia, Anhy	Triad	84051
Ammonia, Parsons	Armour-Dahl	84014
Ammonia, Parsons	Armour-Dahl	84025
Ammonia, Parsons	Armour-Dahl	93200
Ammonia, Parsons	Armour-Dahl	84050
Ammonia, Parsons	Armour-Dahl	84044

SC

12035

LAM012979

exas City Chemicals List, by Product 11-6-85

monium Acetate	Mallinckrodt	91435
monium Bicarbonate A-653	Fisher	91435
monium Chloride	Fisher	91435
monium Chloride	LaMarka	89954
monium Chloride	Mallinckrodt	91435
monium Chloride Solution	Monsanto	84033
monium Chloride-Hydroxide		84051
monium Hexachlorohydrate	RIC/ROC	91435
monium Hydroxide	Mallinckrodt	91435
monium Hydroxide 5%	Fisher	84050
monium Hydroxide 5%	Fisher	84033
monium Oxalate A-679	Fisher	91435
monium Persulfate	Fisher	91435
monium Phosphate	JT Baker	91435
monium Phosphate	Mallinckrodt	91435
monium Sulfate	Fisher	91435
monium Sulfate	JT Baker	91435
ion Resin AHF		84033
ti Freeze		90811
uamicron AU Std	Mitsubishi	91435
uamicron Ck Soln	Mitsubishi	91435
senic Trioxide	Fisher	91435
senic, 1000 ppm Std	American Scientific Prod	91435
senous Oxide	G. Frederick Smith	91435
bestos	Fisher	91435
bestos	Johns-Manville	84053
bestos	Johns-Manville	84050
bestos	Johns-Manville	93200
bestos	Johns-Manville	84044
iation Permatex	Permatex (Spartan Supply)	90811
iation Permatex	Permatex (Spartan Supply)	90770
cto-Methylene Blue	Difco Laboratories	91435
king Soda	Armand Hammer	90811
king Soda	Armand Hammer	84050
lanced Polymer	Betz	84044
rium Chloride	JT Baker	91435
rium Chloride 10 %	Calgon	84014
rium Chloride 10% MO-1	LaMarka	84053
rium Chloride 10% MO-1	LaMarka	91435
rium, 1000 ppm Std	Scientific Products	91435
rett Bonding Agent		90811
rett Bonding Agent		90770
roid Brine Corrosion Additive		84051
ss Stop Leak		90811
hocuproine Reagent	G. Frederick Smith	91435
hophenanthroline	G. Frederick Smith	91435
ring Lubricant		84025
zene	Aldrich	91435
zene	Exxon	93200
zene	Exxon	84014
zene	Shell	84014
zene	Shell	93200
zene (Byproduct)	Monsanto	84014
ect Acid	Fisher	91435
z 174 Foamtrol	Betz	84051
z 2020	Betz	89513

Texas City Chemicals List, by Product 11-6-85

Betz 2020	Betz	84014
Betz 2020	Betz	84051
Betz 2020	Betz	84044
Betz 2020	Betz	84033
Betz 2020	Betz	84025
Betz 2040	Betz	84033
Betz 2040	Betz	84051
Betz 2040	Betz	89513
Betz 2040	Betz	84014
Betz 2040	Betz	84025
Betz 2040	Betz	84044
Betz 430	Betz	84014
Betz 434	Betz	84014
Betz 55	Betz	84051
Betz 6220	Betz	84051
Betz 65	Betz	84051
Betz 65	Betz	84014
Betz J-12 Slimicide	Betz	84014
Betz Krom-Trol X-5	Betz	84051
Betz TC-3	Betz	84014
Big K Solvent	Kernite	84044
Biquinoline, 2,2-	Eastman	91435
Bismuth Nitrate	Fisher	91435
Bismuth, 1000 ppm Std	Fisher	91435
Bisphenol A Concentrate	Monsanto	93200
Blue Ribbon Metal & Chrome Polish #22	Hub States Corp	84014
Blue Ribbon Metal & Chrome Polish #22	Hub States Corp	84051
Blue Ribbon Metal & Chrome Polish #22	Hub States Corp	90770
Blue Ribbon Metal & Chrome Polish #22	Hub States Corp	90811
Blue Ribbon Metal & Chrome Polish #22	Hub States Corp	84025
Blue Ribbon Metal & Chrome Polish #22	Hub States Corp	91435
Bon Ami	Faultless	84033
Bon Ami	Faultless	84048
Bon Ami	Faultless	84051
Bon Ami	Faultless	84014
Bon Ami	Faultless	89954
Bon Ami	Faultless	84053
Bon Ami	Faultless	84050
Bon Ami	Faultless	89513
Bon Ami	Faultless	84025
Bon Ami	Faultless	91435
Bon Ami	Faultless	93200
Bon Ami	Faultless	90770
Bon Ami	Faultless	90811
Bondstrand Epoxy	Ameron	90770
Boric Acid	JT Baker	91435
Boric Acid	Mallinckrodt	91435
Boron, 1000 ppm Std	Harleco	91435
Bowl-W-Wire Deodorant		84025
Bowlette Blox Solid Freshener	Zep Mfg	93200
Brake Fluid		90811
Brij 35, 30 %	Harleco	91435
Brine	TBC - Brinadd	84014
Brine	Texas Brine	89954
Brom Grn- Me Red Ind (EtOH) MO-27	LaMarka	89954
Brom Grn- Me Red Ind (EtOH) MO-27	LaMarka	91435

LAM012981

SC

12037

Texas City Chemicals List, by Product 11-6-85

Bromine	JT Baker	91435
Bromocresol Green, .1% MO-23	LaMarKa	91435
Bromocresol Purple Ind	Mallinckrodt	91435
Bromophenol Blue	Kodak	91435
Bromothymol Blue, .1% (MeOH) MO-24	LaMarKa	91435
Brucine	Fisher	91435
Brutem #30	IW Industries	90770
Brutem #30	IW Industries	90811
Brutem #52	IW Industries	90770
Buffer Solution		84025
Buffer Solution pH 10		84051
Buffer Solution pH 4	LaMarKa	89513
Buffer Solution pH 4	LaMarKa	84051
Buffer Solution pH 5.0		84048
Buffer Solution pH 7	LaMarKa	89954
Buffer Solution pH 7	LaMarKa	84033
Buffer Solution pH 7	LaMarKa	89513
Buffer Solution pH 7	LaMarKa	84053
Buffer Solution pH 7	LaMarKa	84051
Buffer pH 4.0, 7.0	Fisher	84014
Bug Killer Spray Machine #11		90811
Butanol	Monsanto CHB	93200
Butyl Alcohol	Mallinckrodt	91435
Butyl Alcohol, iso-		91435
Butyl Alcohol, sec-	Fisher	91435
Butylalcohol, tert-	Fisher	91435
Butylamine	Eastman	91435
Butylamine, 20% MO-30	LaMarKa	91435
Butylamine, tert-	Dept 25	91435
Butylbenzene, n-	Aldrich	91435
Butylbenzene, sec-	Aldrich	91435
Butylbenzene, tert-	Aldrich	91435
C-100 Pipe Dope		84051
C-1102 Industrial Cleaner	DuBois	90770
C-1102 Industrial Cleaner	DuBois	90811
C-30 Biocide	Betz	84051
CSA Anti Seize Comp	Fel Pro	90770
CSA Anti Seize Comp	Fel Pro	84033
COD Digestion Solution 0-150 ppm	Hach	91435
CRC 3-36 Penetrating Fluid	CRC Chemicals USA	90770
CRC Galvanize Cold Set	CRC Chemicals USA	90811
CRC Zinc It Cold Galvanize	CRC Chemicals USA	90811
CRC Zinc It Cold Galvanize	CRC Chemicals USA	90770
Caffeine	Eastman	91435
Calcium Carbonate	Fisher	91435
Calcium Chloride	Fisher	91435
Calcium Silicate	Johns-Manville	90811
Calcium, 1000 ppm Std	Harleco	91435
Calfonex	Calfonex	84053
Calgon Chemical	Calgon	84025
Carbon Dioxide	Air Products	93200
Carbon Dioxide	Air Products	84050
Carbon Dioxide	Air Products	84044
Carbon Monoxide	Monsanto	84044
Carbon Monoxide	Monsanto	84050
Catalyst C-41	Vistron	84051

Texas City Chemicals List, by Product 11-6-85

Cation Resin Dowex HDR	Dow Chemical	84033
Cationic Resin C25D	Duolite	84033
Caustic	PPG	84051
Ceilcrete Resin #648I	Ciecl Doyle Co	90770
Ceilcrete Resin #648I	Ciecl Doyle Co	90811
Ceilcrete Resins Hardener #4	Ciecl Doyle Co	90770
Ceilcrete Resins Hardener #4	Ciecl Doyle Co	90811
Cement Accelerator #14	UCAR (Union Carbide)	90770
Cement Adhesives		90811
Ceric Ammonium Sulfate	Fisher	91435
Chamber Maid	Kernite	84050
Chamber Maid	Kernite	93200
Chamber Maid	Kernite	90770
Chamber Maid	Kernite	90811
Chamber Maid	Kernite	91435
Chem Dip - Berryman		90811
Chemonitor Std Na Soln	Calgon	89954
Chico A4 Sealing Compound	Crouse Hinds	84033
Chloramine T	Kodak	91435
Chlorine	Dixie	89513
Chlorine	Dow	84014
Chlorine	Dow	89954
Chlorine	Dow	93200
Chlorine	Dow	84051
Chlorine	Dow	84044
Chlorine	Dow	84033
Chlorine HTH	Olin	84025
Chlorobenzene	Fisher	91435
Chloroform	Mallinckrodt	91435
Chlorophenol Red	LaMarka	84048
Chlorophenol Red MO-52	LaMarka	91435
Chromatropic Acid	Kodak	91435
Chromerge Acid		91435
Chromium Reagent Powder Pillows	Betz	84051
Chromium Trioxide	Fisher	91435
Chromium Trioxide	JT Baker	91435
Chromium, 1000 ppm Std	American Scientific Prod	91435
Chromous Chloride Soln	Fisher	91435
Classic Floor Finish	All States Chem	90770
Classic Floor Finish	Brulin	89513
Classic Floor Stripper	All States Chem	90770
Classic Floor Wax	Brulin	90811
Classic Floor Wax	Brulin	90770
Clorox Bleach	Clorox	89513
Clorox Bleach	Clorox	84051
Clover Lapping & Grinding Compound	BASF	90811
Clover Lapping & Grinding Compound	BASF	90770
Clover Lapping & Grinding Oil	BASF	84053
Coat B 1400	Betz	84051
Cobalt & Olefin (.402)	Control Lab	84048
Cobalt & Water (.800)	Control Lab	84048
Cobalt Chloride	JT Baker	91435
Cobalt Oxide Catalyst	Hoboken-Overpelt	84048
Cobalt, 1000 ppm Std	Scientific Products	91435
Concrete Curing Resin	IW Industries	90770
Concrete Curing Resin	IW Industries	90811

LAM012983

Texas City Chemicals List, by Product 11-6-85

Conductivity Reagent A	Calgon	84014
Conductivity Reagent A	Calgon	84053
Conductivity Reagent A	Calgon	89954
Conductivity Reagent No 1	Calgon	84053
Contact Cement	Weldwood	90770
Contact Cement (Wilhold) Glue		90811
Cooling System Flush	Prestone	90811
Copaltite Gasket Compress	Natl Engr Products	90811
Copaltite Gasket Compress	Natl Engr Products	90770
Copper Chromite Catalyst	Calsicat	84048
Copper Methanol Catalyst	ICI	84044
Copper, 1000 ppm Std	Scientific Products	91435
Corrosion Coating "75"	Industrial Services	90770
Cresol Red	Fisher	91435
Crotonitrile	Aldrich	91435
Crown Safety Solvent		90811
Cumene	Aldrich	91435
Cupric Acetate	JT Baker	91435
Cupric Nitrate	Fisher	91435
Cuprous Chloride	Mallinckrodt	91435
Curcumin Indicator	Eastman	91435
Current Drain Cleaner	Kernite	90811
Current Drain Cleaner	Kernite	90770
Cutting Oil	Chesterton	90770
Cutting Oil	Gulf	90811
Cyclohexane	Mallinckrodt	91435
Cyclohexane	Phillips	91435
Cyclopentanone	Eastman	91435
D1 Wash Solvent	Technicon Industrial	91435
D2 Wash Solvent	Technicon Industrial	91435
DPD Free Chlorine Reagent Powder 2094	Betz	84014
DPD Free Chlorine Reagent Powder 2094	Betz	84025
DPD Free Chlorine Reagent Powder 2094	Betz	89954
DPD Free Chlorine Reagent Powder 2094	Betz	84033
DPD Free Chlorine Reagent Powder 2094	Betz	84051
Dawn	Proctor & Gamble	93200
De Dis Deodorizer/Disinfectant	All States Chem	89513
De Dis Deodorizer/Disinfectant	All States Chem	93200
De Dis Deodorizer/Disinfectant	All States Chem	91435
De Dis Deodorizer/Disinfectant	All States Chem	90811
De Dis Deodorizer/Disinfectant	All States Chem	90811
De Dis Deodorizer/Disinfectant	All States Chem	90770
Decane, 1-	Chemical Supply, Ohio	91435
Decane, n-	Fisher	91435
Decane, n-	Phillips	91435
Dehydro Offgas	Monsanto	84014
Dehydrogenated Mixture (DM)	Monsanto	84014
Denso Paste	Denso of Canada Ltd	90770
Devcon Steel Putty	Devcon Corp	90770
Devcon Stop	Devcon Corp	90770
Diatomaceous Earth	Johns-Manville	84056
Dichlorofluorescin	Eastman	91435
Dichloroisocyanuric Acid Na Salt	Eastman	91435
Diesel		90811
Diethyl-p-Phenylenediamine Oxalate, n,n	Kodak	91435
Diethylbenzene	Aldrich	91435

Texas City Chemicals List, by Product 11-6-85

Diisobutylene	Eastman	91435
Dimethyl diphenyl bi pyrazoline	Kodak	91435
Dimethyl-1,3-Cyclohexanedione, 5,5-	Eastman	91435
Dimethylamino-Benzaldehyde, p-	Eastman	91435
Dimethylamino-Benzaldehyde, p-	Mallinckrodt	91435
Dimethylcyclohexane, cis-	Phillips	91435
Dimethylcyclohexane, trans-	Phillips	91435
Dinitrobenzene, o-	Aldrich	91435
Dinitrophenol	Martin-Marietta	84014
Dinitrophenol	Martin-Marietta	89513
Dinitrophenol, 2,4-	Aldrich	91435
Dinitrophenylhydrazine, 2,4-	Eastman	91435
Dip-It Stain Remover	Economics Lab	90770
Dip-It Stain Remover	Economics Lab	90811
Diphenyl Carbazide, 5-	Fisher	91435
Diphenylcarbohydrazide	Eastman	91435
Disodium Sulfite		89954
Dodecane	Aldrich	91435
Dowex 1-X8	JT Baker	91435
Draino	Drackett	91435
Draino	Drackett	84025
Draino	Drackett	84051
Draino	Drackett	90770
Draino	Drackett	89954
Draino	Drackett	84053
Draino	Drackett	90811
Draino	Drackett	84044
Dykem Steel Blue	Dykem Co	90770
E-Z Weld Primer	PCI Industries	90770
EDTA Buffer Reagent	Fisher	84051
EDTA Buffer Reagent	Fisher	84050
Easin Y	Fisher	91435
Easy Off Oven Cleaner	Boyle-Midway	89513
Easy Off Oven Cleaner	Boyle-Midway	93200
Easy Off Oven Cleaner	Boyle-Midway	84051
Easy Off Oven Cleaner	Boyle-Midway	84014
Easy Off Oven Cleaner	Boyle-Midway	84025
Easy Off Oven Cleaner	Boyle-Midway	84044
Easy Off Oven Cleaner	Boyle-Midway	84050
Easy Off Oven Cleaner	Boyle-Midway	89954
Easy Off Oven Cleaner	Boyle-Midway	90811
Easy Off Oven Cleaner	Boyle-Midway	90770
Elmer's Glue-All	Borden	90770
Emerge Degreaser	Kernite	90770
Emerge Degreaser	Kernite	90811
Erichrome Black T Indctr	J & S Sales	89954
Esterification Pump Out	Monsanto	84033
Ethanol		84044
Ethanol	Aapar	91435
Ether Starting Fluid		90811
Ethyl Acetate	American Scientific	91435
Ethyl Acetate	Mallinckrodt	91435
Ethyl Cellulose	Fisher	91435
Ethyl Chloride	Dow	84014
Ethyl Chloride	Dow	93200
Ethylbenzene	Aldrich	91435

Texas City Chemicals List, by Product 11-6-85

Ethylbenzene	Monsanto	84014
Ethylbenzene	Monsanto	89513
Ethylene	Amoco	84014
Ethylene	Arco	84014
Ethylene	DuPont	84014
Ethylene	Gulf	84014
Ethylene Glycol	Mallinckrodt	91435
Ethylene Glycol	McKesson	89513
Ethylene Std (C1,C2=,C2,C3=,C3,N2)	Scientific Gas Prod	91435
Ethyltoluene, m-, p-	Aldrich	91435
Eutectic Salt	DuPont	84053
F442 Bellows Oil	Scoville	90770
F442 Bellows Oil	Scoville	84051
F442 Bellows Oil	Scoville	84053
FG-10 Antifoam	Dow Corning	84033
Fantastik	Texize	90770
Fantastik	Texize	84044
Fantastik	Texize	84033
Fantastik	Texize	84050
Fantastik	Texize	89513
Fantastik	Texize	84048
Fantastik	Texize	84053
Fantastik	Texize	84051
Fantastik	Texize	84014
Fantastik	Texize	84025
Fantastik	Texize	89954
Fantastik	Texize	93200
Fantastik	Texize	90811
Fend-X Hand Cream	Mine Safety Appliances	89513
Ferric Ammonium Sulfate	Mallinckrodt	91435
Ferric Chloride, .2% MO-31	LaMarka	91435
Ferrous Ammonium Sulfate	Fisher	91435
Ferrous Ammonium Sulfate	Mallinckrodt	91435
Fibercast Cement	Texas Marine Supply	90770
Floor Cleaner	Spot Cleaner	84014
Floor Polish	Gradwohl Sales Co	90770
Floor Polish	Gradwohl Sales Co	90811
Floor Polish	Gradwohl Sales Co	93200
Floor Polish	Gradwohl Sales Co	84053
Floor Stripper		84051
Floor Stripper		90811
Floor Stripper	All States Chem	84025
Floor Stripper	Gradwohl Sales Co	93200
Floor Sweep Oil Base	Brawner Paper Co	90811
Floor Sweep Oil Base	Brawner Paper Co	90770
Floor Sweep Wax Base	Brawner Paper Co	90811
Floor Sweep Wax Base	Brawner Paper Co	90770
Floor Tile Adhesive	Sherwin-Williams	90770
Floor Wax		84051
Floor Wax	All States Chem	84025
Flux Oil	Monsanto	84014
Formaldehyde, 37%	JT Baker	91435
Formic Acid	Monsanto	84025
Formula 110 All Purpose Cleaner	Century Paper	90811
Formula 110 All Purpose Cleaner	Century Paper	90770
Formula 158-E Hvy Duty Cleanser	Zep Mfg	84051

Texas City Chemicals List, by Product 11-6-85

Formula 158-E Hvy Duty Cleanser	Zep Mfg	90770
Formula 158-E Hvy Duty Cleanser	Zep Mfg	84053
Formula 158-E Hvy Duty Cleanser	Zep Mfg	84044
Formula 158-E Hvy Duty Cleanser	Zep Mfg	84050
Formula 158-E Hvy Duty Cleanser	Zep Mfg	84025
Formula 158-E Hvy Duty Cleanser	Zep Mfg	90811
Foster 81-27 Fibrous Adhesive	H.B. Fuller	84051
Foster 81-27 Fibrous Adhesive	H.B. Fuller	90770
Freon 11	DuPont	84044
Freon 11	DuPont	84014
Freon 113	DuPont	84044
Freon 114	DuPont	84044
Freon 12	DuPont	84044
Freon 12	DuPont	84033
Freon 12-B2	DuPont	84044
Freon 13B1	DuPont	84044
Freon 21	DuPont	84044
Freon 22	DuPont	84014
Freon 22	DuPont	84044
Freon 22	DuPont	84050
Fuchsin	Hartman-Liddon Co	91435
Fuel Gas	Houston Gas	84050
Furan Catalyst 2001	Resin Systems Inc	90770
Furan Resin 1001	Resin Systems Inc	90770
Furex #2 Hardener	Conley Corp	90770
Furex Cement	Ffaudloe	90770
Furniture Polish	Brawner Paper Co	84051
Furniture Polish	Brawner Paper Co	84025
Gallic Acid # 276	Betz	84051
Gallic Acid # 276	Betz	89954
Gas Std (CO2,C3=,C3,O2,N2,CO)	Monsanto - Choc Bayou	91435
Gasoline	Texaco	90811
Gasoline	Texaco	90770
Gasoline	Lion Oil	90811
Gasoline-Regular	Texaco	90811
Gasoline-Unleaded	Texaco	90811
Glass Wax	Gold Deal Co	90770
Gleam Dishwashing Compound	Kernite	91435
Gleam Dishwashing Compound	Kernite	93200
Gleam Dishwashing Compound	Kernite	90770
Gleam Dishwashing Compound	Kernite	84025
Gleam Dishwashing Compound	Kernite	84050
Glocoat Floor Wax	Johnson	90770
Glocoat Floor Wax	Johnson	90811
Glucose Anhy, D-	Mallinckrodt	91435
Glutamic Acid, L (+) -	Kodak	91435
Go Jo No-Lok	Jergens	84053
Go Jo Waterless Hand Cleaner	Go Jo	90811
Go Jo Waterless Hand Cleaner	Go Jo	84025
Go Jo Waterless Hand Cleaner	Go Jo	84051
Go Jo Waterless Hand Cleaner	Go Jo	84050
Go Jo Waterless Hand Cleaner	Go Jo	90770
Golden G Gear Oil	Pacer	90811
Golden G Gear Oil	Pacer	84050
Golden G Gear Oil	Pacer	84053
Grease		90811

LAM012987

Texas City Chemicals List, by Product 11-6-85

Gulf Lube Motor Oil HD SAE 30	Gulf	90770
Gulfpride SAE 30 Oil 10W40	Gulf	84051
Gulfpride SAE 30 Oil 10W40	Gulf	90811
HC-30 Pipe Thread	John Crane Packing Co	90770
Halogen	Southwestern Anly	91435
Halstead Adhesive Bonding Agent		90811
Hand Lotion	Jergens	90770
Hand Lotion	Jergens	90811
Handy Oil	Exxon	90811
Handy Oil	Exxon	90770
Hardness Buffer Low Rnge	Craft Products	89954
Hardness Titrant 354,352	Craft Products	84051
Hardness Titrnt # 292	Betz	89954
Hardness Titrnt Low Rnge	Craft Products	89954
Haveg #41 NF Cement	Ametek	90770
Haveg Cement #22 Hardener	Ametek	90770
Haveg Hardener	Ametek	90770
Heavy Oxo Ends (HOE)	Monsanto	84048
Helium	Air Products	84051
Heptane, n-	Phillips	91435
Hexane	PFR Lab	84053
Hexane, 10% Hydroxyl	G. Frederick Smith	91435
Hexane, n-	Fisher	91435
Hexene, 1-	Chemical Supply, Ohio	91435
High Flow Super Cell		89954
Holstead Adhesive Bonding Agent		90770
Hunter Bowl Cleaner		84051
Hydex Room Deodorizer		90811
Hydraulic Jack Oil	Permatex	84053
Hydraulic Jack Oil	Permatex	84051
Hydraulic Jack Oil	Permatex	84025
Hydraulic Jack Oil	Permatex	90811
Hydrazine	Kodak	91435
Hydrazine 50 %	Olin Chemicals	84044
Hydrazine B Solution	QA Lab	84053
Hydrazine Reagent A	Taylor	84053
Hydrazine Reagent A	Taylor Chem	91435
Hydrochloric Acid		84048
Hydrochloric Acid	Mailinckrodt	91435
Hydrochloric Acid 0.3 N	LaMarka	84044
Hydrochloric Acid .0295 N	LaMarka	84053
Hydrochloric Acid .035 N	LaMarka	84053
Hydrochloric Acid .5 N	Calgon	84014
Hydrochloric Acid 0.03 N	Calgon	84014
Hydrochloric Acid 1:1	LaMarka	84053
Hydrochloric Acid 25 %	Calgon	84014
Hydrochloric Acid, .10 N MO-32	LaMarka	91435
Hydrochloric Acid, .50 N MO-3	LaMarka	91435
Hydrochloric Acid, 1.0 N MO-33A	LaMarka	91435
Hydrochloric Acid, 1:1 MO-5	LaMarka	91435
Hydrochloric Acid, 1:3 MO-4	LaMarka	91435
Hydrochloric Acid. .030 N MO-2	LaMarka	91435
Hydrogen		84051
Hydrogen	Monsanto	84044
Hydrogen	Monsanto	84048
Hydrogen	Monsanto	84050

Texas City Chemicals List, by Product 11-6-85

Hydrogen Chloride, Anhy	Dow	84014
Hydrogen Chloride, Anhy	Dow	84033
Hydrogen Cyanide	Monsanto	84025
Hydrogen Cyanide	Monsanto	84033
Hydrogen Cyanide	Monsanto	84051
Hydrogen Sulfide	Banco	91435
Hydroquinone	Kodak	84051
Hydroquinone Technical Grade	Chem Central	91435
Hydroxylamine Hydrochloride	Mallinckrodt	91435
Hydroxylamine Hydrochloride, 1.5% MO-34	LaMarka	91435
Hydroxylamine Hydrochloride, 2.0% MO-35	LaMarka	91435
Hypophosphorus Acid	McKessons & Robbins	84050
Impact Base A	Kernite	90770
Impact Hardener	Kernite	90770
Indigo Carmine Reagent #681	Betz	84051
Insect Fog	West Chemical	84025
Iodine	Fisher	91435
Iodine	Houston Chem	84050
Iodine Scavenger Tank Liquid	Monsanto	84050
Iodine, .1N MO-37	LaMarka	91435
Iodine-Iodate	Betz	84025
Iodine-Iodate	Betz	84051
Ion Exchange Resin	Rohm & Haas	84044
Iron Oxide Catalyst, 105	Shell	84014
Iron Oxide Catalyst, 6641	United Catalyst	84014
Iron, 1000 ppm Std	Scientific Products	91435
Isatin (C ₈ H ₅ O ₂ N)	Fisher	91435
Isoamyl Alcohol	JT Baker	91435
Isobutylene	Arco	93200
Isobutylene	Exxon	84025
Isobutylene	Exxon	93200
Isobutylene	Tex-Chem	84025
Isobutylketone	JT Baker	91435
Isopropanol		84048
Isopropanol	Mallinckrodt	91435
Isopropanol	Stores	89954
K-350 Glass Cleaner	Kernite	90811
K-Onakil Week Killer	Kernite	90811
K-Onakil Week Killer	Kernite	90770
K-35	Calgon	84053
K-350 Aerosol Protective Coating	Kernite	90811
K-350 Glass Cleaner	Kernite	93200
K-350 Glass Cleaner	Kernite	90770
K-Bond	Kernite	90770
K-Boost Diesel Fluid	Kernite	90811
K-Cide Cooling Tower Algaecide	Kernite	90770
K-Cide Cooling Tower Algaecide	Kernite	90811
K-Kote - Coatings	Kernite	90811
K-Kote - Coatings	Kernite	90770
K-Last	Kernite	90770
K-Last Dry Film Lubricant	Kernite	84053
K-Last Dry Film Lubricant	Kernite	84033
K-Plus	Kernite	90770
K-Plus	Kernite	89954
Karl Fisher 3mg/ml MO-16	LaMarka	91435
Kermit Liquid Soap		90811

Texas City Chemicals List, by Product 11-6-85

Kerosene	Exxon	84014
Kerosene	Exxon	84051
Kerosene	Exxon	89513
Kerosene	Exxon	84050
Kerosene	Exxon	84044
Kerosene	Exxon	90770
Kerosene	Exxon	90811
Kerosene	Exxon	84053
Key Loc Primer	Key Line Inc	90770
Kleenscribe Layout Dye	L.S. Starrett	90770
Krylon 1303 Crystal Clear	Krylon	90770
Krylon Spray Enamel	Krylon	84044
Krylon Spray Enamel	Krylon	90811
Krylon Spray Enamel	Krylon	90770
Krylon Spray Enamel	Krylon	84053
Krylon Spray Enamel	Krylon	90811
Kwik Foaming Cleaner	Kernite	93200
Kwik Foaming Cleaner	Kernite	84053
Kwik Foaming Cleaner	Kernite	84044
Kwik Foaming Cleaner	Kernite	91435
Kwik Foaming Cleaner	Kernite	90770
Kwik Foaming Cleaner	Kernite	90811
Kwik Foaming Cleaner	Kernite	90811
LCD-150	Calgon	84053
LP-9 PHB Phosphate	Calgon	84053
LPS 1	Holt-Lloyd	84053
LPS 1	Holt-Lloyd	90770
LPS 1	Holt-Lloyd	90811
LPS 2 Gen Purpose Lubricant	Holt-Lloyd	90811
LPS 2 Gen Purpose Lubricant	Holt-Lloyd	90770
LPS 2 Gen Purpose Lubricant	Holt-Lloyd	84033
LPS 2 Gen Purpose Lubricant	Holt-Lloyd	89513
LPS 2 Gen Purpose Lubricant	Holt-Lloyd	84053
LPS 3 Rust Inhibitor	Holt-Lloyd	89513
LPS 3 Rust Inhibitor	Holt-Lloyd	90770
LPS 3 Rust Inhibitor	Holt-Lloyd	84053
LPS 3 Rust Inhibitor	Holt-Lloyd	90811
LPS Electro Contact Cleaner	Holt-Lloyd	90811
LPS Electro Contact Cleaner	Holt-Lloyd	84053
LPS Electro Contact Cleaner	Holt-Lloyd	84033
LPS Electro Contact Cleaner	Holt-Lloyd	90770
Lactic Acid	Monsanto	84033
Lactic Acid	Monsanto	89513
Lactonitrile	Monsanto	84025
Lactonitrile	Monsanto	84033
Lava Soap	Proctor & Gamble	89513
Lava Soap	Proctor & Gamble	91435
Lava Soap	Proctor & Gamble	84044
Lava Soap	Proctor & Gamble	84025
Lava Soap	Proctor & Gamble	84050
Lava Soap	Proctor & Gamble	90811
Lava Soap	Proctor & Gamble	84053
Lava Soap	Proctor & Gamble	93200
Lava Soap	Proctor & Gamble	90770
Lead Carbonate	Fisher	91435
Lead Carbonate	JT Baker	91435

LAM012990

Texas City Chemicals List, by Product 11-6-85

Lead Tetraacetate	JT Baker	91435
Lead, 1000 ppm Std	American Scientific Prod	91435
Leak Tek	Shamrock Specialties	84025
Lectric Like	Madison Bionics	84053
Lidok # 2 Grease	Exxon	84014
Lidok # 2 Grease	Exxon	84051
Light & Heavy Ends	Monsanto	84053
Light Ends Oxo Bottoms (LEOB)	Monsanto	84048
Light Ends Oxo Heads (LEOH)	Monsanto	84048
Light Ends Oxo Heads (LEOH)	Monsanto	89954
Lime (CaOH)	US Gypsum	89954
Lime-A-Way	Economics Lab	90770
Limestone (CaO)	Southern Cement	84050
Liqui-Gro Soil Supplement	Kernite	90770
Liqui-Gro Soil Supplement	Kernite	90811
Liquid Hand Soap	Century Paper	84025
Liquid Plummer	Clorox	90811
Liquid Plummer	Clorox	84025
Liquid Plummer	Clorox	90770
Lithium Chloride	Fisher	91435
Lithium Chloride, 1.0 N MO-38	LaMarka	91435
Lithium Dibromide	Strauss	84044
Lithium Dibromide	Strauss	84050
Lithium Hydroxide	Fisher	91435
Lithium Hydroxide, 1.0 N MO-39	LaMarka	91435
Locquic Bond Primer T Bonding Matl	Motion Industries	90811
Loctite & Locquic Primer "T"	Motion Industries	90770
Loctite 601	Loctite	90770
Loctite Instant Seal Plastic Gasket	Loctite	90770
Loctite Retaining Compound	Loctite	84053
Loctite Retaining Compound	Motion Industries	90811
Lubricating Grease	Exxon	90770
Lubriplate Grease	Branche-Krachy	89513
Lubriplate Grease	Branche-Krachy	84053
Lubriplate Grease	Branche-Krachy	90811
M-10 Mastik	Childers	90770
M-10 Mastik	Childers	90811
M-77 Spray Adhesive		90770
MAC III Catalyst	United Catalysts Inc	84051
MBTH	Matheson, Coleman & Bell	91435
MC-9 Halogenated Solvent	Zep Mfg	90811
MC-9 Halogenated Solvent	Zep Mfg	84050
MC-9 Halogenated Solvent	Zep Mfg	84053
MC-9 Halogenated Solvent	Zep Mfg	90770
MC-9 Halogenated Solvent	Zep Mfg	90811
Magnesium Chloride		91435
Magnesium, 1000 ppm Std	American Scientific Prod	91435
Manganese, 1000 ppm Std	Harleco	91435
Manganous Sulfate	Fisher	91435
Marsh Stencil Ink	Marsh Stencil Machine Co	90770
Marsh Stencil Ink Spray	Marsh Stencil Ink Co	84053
Meco-Amino Powder	Mairten Engineering	84053
Mercaptoethanol, 2-	JT Baker	91435
Mercuric Acetate	JT Baker	91435
Mercuric Chloride	Mallinckrodt	91435
Mercuric Oxide	Fisher	91435

Texas City Chemicals List, by Product 11-6-85

Mercuric Sulfate	Mallinckrodt	91435
Mercury, 1000 ppm Std	Harleco	91435
Methane	Houston Gas	84025
Methane	Houston Gas	84033
Methane	Houston Gas	84051
Methane	Houston Gas	84014
Methane	Houston Gas	84044
Methanol	Monsanto	84033
Methanol	Monsanto	89513
Methanol	Monsanto	91435
Methanol	Monsanto	84050
Methanol	Monsanto	84044
Methanol Distillation Feed	Monsanto	84033
Methanol Purge Gas	Monsanto	84044
Methyl Acetate	Matheson, Coleman & Bell	91435
Methyl Alcohol	Mallinckrodt	91435
Methyl Ether Hydroquinone	Kodak	84051
Methyl Ethyl Pyridine, 3-,5-	Eastman	91435
Methyl Formate	Matheson, Coleman & Bell	91435
Methyl Iodide	Acetic Bench Unit	91435
Methyl Iodide	Monsanto	84050
Methyl Lactate		91435
Methyl Lactate	Monsanto	84033
Methyl Orange	Mallinckrodt	91435
Methyl Orange Indicator	LaMarKa	89954
Methyl Orange, 1 gpl MO-22	LaMarKa	91435
Methyl Purple Indicator	Ricca Chemical	91435
Methyl Red	JT Baker	91435
Methyl Red Indicator, .1% (MeOH) MO-19	LaMarKa	91435
Methyl Yellow	JT Baker	91435
Methyl-1-Phenyl-2-Pyrazolin-5-one,3-	Kodak	91435
Methylal	Fisher	91435
Methylaminophenol Sulfate, p-	Eastman	91435
Methylcyclohexane	Phillips	91435
Methyldindole	Matheson, Coleman & Bell	91435
Methylene Blue	Fisher	91435
Methylene Blue	Merck	91435
Methylene Blue, .2% (EtOH) MO-26	LaMarKa	91435
Methylene Chloride	Dow	84044
Methylene Chloride	Dow	84014
Methylene Chloride	Fisher	84044
Methylene Chloride	Fisher	84014
Methylene Chloride	JT Baker	91435
Methylstyrene, a-	Aldrich	91435
Microcel T-38 Calcium Silicate	Johns-Manville	84056
Mineral Spirits		84048
Mint Air Freshener	Brawner Paper Co	90770
Mint Air Freshener	Brawner Paper Co	90811
Mint Air Freshener	Brawner Paper Co	93200
Mobiltherm Oil	Mobil	84053
Moist-Kure	Kernite	90811
Molecular Sieve 13X	Union Carbide	84044
Moly Coat		90811
Moly-Lit Anti Seize Pipe Dope	Technology Inc	90811
Moly-Lit Anti Seize Pipe Dope	Technology Inc	84051
Moly-Lit Anti Seize Pipe Dope	Technology Inc	84053

LAM012992

Texas City Chemicals List, by Product 11-6-85

Moly-Lit Anti Seize Pipe Dope	Technology Inc	90770
Molybdate Reagent 2044	Betz	84014
Molybdate Reagent 2044	Betz	84025
Molybdate Reagent 2044	Betz	84033
Molybdenum, 1000 ppm Std	Fisher	91435
Motor Oil	Exxon	90770
Motor Oil	Gulf	84025
Motor Oil	Gulf	90811
Mountain Spring	Kernite	90770
Mountain Spring Air Freshener	Kernite	90811
Mountain Spring Air Freshener	Kernite	90770
Mr Skin Liquid Soap	Kernite	90770
Mr Skin Liquid Soap	Kernite	90811
Murexide	Aldrich	91435
Murexide	Eastman	91435
Muriatic Acid	Monsanto	84014
Muriatic Acid	Monsanto	89954
Muriatic Acid	Monsanto	93200
Muriatic Acid	Monsanto	89954
Muriatic Acid	Reagent	93200
Muriatic Acid	Reagent	84033
Muriatic Acid (Byproduct)	Monsanto	84014
N72 Bar Soap	Calgon	89513
NH3N Std Soln	Beckman	89513
Naphthalene	Monsanto CHB	93200
Naphtholphthalein, alpha	WH Curtin & Co	91435
New Score 10314 Chlorinated Detergent		90811
New Score 10314 Chlorinated Detergent		90770
Nickel Nitrate	Mallinckrodt	91435
Nickel Reformer Cat R-67	Haldor Topsoe	84044
Nickel Reformer Cat R-67-R	Haldor Topsoe	84044
Nickel Reformer Catalyst	Katalco	84044
Nickel, 1000 ppm Std	Hartman, Leddox	91435
Nitric Acid	Mallinckrodt	91435
Nitric Acid, .030 N MO-6A	LaMarKa	91435
Nitric Acid, 1:3 MO-40	LaMarKa	91435
Nitroaniline, p-	Eastman	91435
Nitroaniline, p- (PNA)	Eastman	91435
Nitrobenzaldehyde, p-	Aldrich	91435
Nitrogen	Big Three	84044
Nitrogen	Big Three	84014
Nitrogen	Big Three	84050
Nitrogen	Big Three	84051
Nitto B Catalyst	Nitto	84051
Nitto C Catalyst	Nitto	84051
No-Lok Thread Dope	Go Jo	90811
No-Lok Thread Dope	Go Jo	90770
Non-Aromatics	John Garton	91435
Nonane, n-		91435
Nozzle-Gel Welding Goo		90811
Nozzle-Gel Welding Goo		90770
Nutra K Liq Hi N2 Fertilizer 17-8-0	Kernite	90770
Nutra K Liq Hi N2 Fertilizer 17-8-0	Kernite	90811
Oakite Emprox 555	Oakite	84025
Oatey Cleaner	Oatey Co	90770
Oatey Heavy Duty Clear Cement	Oatey Co	90770

LAM012993

Texas City Chemicals List, by Product 11-6-85

Datey Purple Primer	Datey Co	90770
Octane, iso-	JT Baker	91435
Octane, n-	Eastman	91435
Octane, n-	Phillips	91435
Octene, 1-	Chemical Supply, Ohio	91435
Octyl Alcohol	JT Baker	91435
Off Insect Repellent	Johnson	89513
Off Insect Repellent	Johnson	90770
Off Insect Repellent	Johnson	90811
Off Insect Repellent	Johnson	84014
Off Insect Repellent	Johnson	84053
Off Insect Repellent	Johnson	89954
Old English Furniture Polish	Boyle-Midway	91435
Old English Furniture Polish	Boyle-Midway	90770
Olefins	Ethyl	93200
Olefins	Ethyl	84048
Omnicoal Machine Cutting Oil	Kernite	90811
Omnicoal Machine Cutting Oil	Kernite	90770
One Mix 2-Cycle Oil for Weed Eater	City Motor	90770
One Mix 2-Cycle Oil for Weed Eater	City Motor	90811
Orthotolidine	Fisher	84014
Orthotolidine	Fisher	91435
Oxalic Acid Dihydrate	Rhone-Poulenc	84056
Oxazole		91435
Oxo Alcohol	Monsanto	89513
Oxo Alcohol, Crude	Monsanto	84048
Oxo Alcohol, Product	Monsanto	84048
Oxo Residue Gas	Monsanto	84048
Oxygen		84051
Oxygen - Welding	Linde - UC	90811
PCA Contact Cleaner	Jim York Chem	84053
PSA Molecular Sieve	Zeochem	84044
PVC Solvent Cement	Mibco Chemtrol	90770
Pax-Lano-Sav Gran Skin Cleaner	Calgon	84033
Pax-Lano-Sav Gran Skin Cleaner	Calgon	84050
Pax-Lano-Sav Gran Skin Cleaner	Calgon	90770
Pax-Lano-Sav Gran Skin Cleaner	Calgon	90811
Pax-Lano-Sav Gran Skin Cleaner	Calgon	84025
Pax-Lano-Sav Gran Skin Cleaner	Calgon	84051
Pax-Lano-Sav Gran Skin Cleaner	Calgon	84044
Penetrating Oil		84025
Perchloric Acid 70 %	Mallinckrodt	91435
Periodic Acid	G. Frederick Smith	91435
Periodic Acid	Matheson, Coleman & Bell	91435
Permatex Form A Gasket #1	Permatex	90770
Permatex Form A Gasket #2	Permatex	90770
Phenanthroline, 1-10	Mallinckrodt	91435
Phenol	Fisher	91435
Phenol	Mallinckrodt	91435
Phenolphthalein	Calgon	84014
Phenolphthalein	Eastman	91435
Phenolphthalein	JT Baker	91435
Phenolphthalein 20 GPL	LaMarka	84053
Phenolphthalein 20 GPL	LaMarka	89954
Phenolphthalein Indicator		84051
Phenolphthalein, 20 gpl MD-20	LaMarka	91435

Texas City Chemicals List, by Product 11-6-85

Phenomycin Detergent	Hunter Chem	90811
Phenomycin Detergent	Hunter Chem	90770
Phenyl Sulfide	Aldrich	91435
Phenylacetylene	Aldrich	91435
Phenylenediamine Dihydrochloride, p-	Kodak	91435
Phos-Coat		90811
Phosphate Reagent 2	Calgon	84014
Phosphate Reagent 3	Calgon	84014
Phosphate Reagent A	Calgon	84014
Phosphoric Acid	Mallinckrodt	91435
Phosphoric Acid	McKesson	84025
Photometer Molybdate	Calgon	84053
Phthalic Anhydride, Crude	Monsanto	84053
Phthalic Anhydride, Product	Monsanto	84053
Picric Acid, .02% (Tol) MO-41	LaMarka	91435
Pimelic Acid	Eastman	91435
Piprolidine Carbodithioic Acid NH3 Salt	Kodak	91435
Plastic Pipe Cement	McJunkin Corp	90770
Plastic Pipe Cement	McJunkin Corp	90811
Plastone 6000 Floor Wax	All States Chem	91435
Plastone 6000 Floor Wax	All States Chem	90770
Plastone 6000 Floor Wax	All States Chem	84050
Plastone 6000 Floor Wax	All States Chem	90811
Polyethylbenzene	Monsanto	84014
Polymer 1192	Betz	89954
Polymer Buffer 790	Betz	84051
Polymer Buffer 790	Betz	84044
Polymer Buffer 790	Betz	84033
Polymer Buffer 790	Betz	84025
Polymer Buffer 790	Betz	84014
Polymer Reagent 791	Betz	84025
Polymer Reagent 791	Betz	84051
Polymer Reagent 791	Betz	84014
Polymer Reagent 791	Betz	84033
Polymer Reagent 791	Betz	84044
Potassium Acetate	Fisher	91435
Potassium Acetate	JT Baker	91435
Potassium Acid Phthalate	Mallinckrodt	91435
Potassium Bromate	JT Baker	91435
Potassium Carbonate	JT Baker	91435
Potassium Carbonate	Mallinckrodt	91435
Potassium Chloride	Fisher	91435
Potassium Chloroplatinate CoCl - Color St	Ricca	91435
Potassium Chromate	Fisher	91435
Potassium Chromate	Mallinckrodt	91435
Potassium Chromate, 5% MO-18	LaMarka	91435
Potassium Cyanide	Fisher	91435
Potassium Cyanide	Kodak	91435
Potassium Cyanide	Mallinckrodt	91435
Potassium Dichromate	Fisher	89954
Potassium Dichromate, .100 N MO-42	LaMarka	91435
Potassium Ferricyanide	Matheson, Coleman & Bell	91435
Potassium Fluoride	Mallinckrodt	91435
Potassium Hydrogen Phthalate	Fisher	91435
Potassium Hydroxide	Fisher	84050
Potassium Hydroxide, .1 N MO-54	LaMarka	91435

LAM012995

Texas City Chemicals List, by Product 11-6-85

Potassium Hydroxide, 10% (MeOH) MQ-43	LaMarkKa	91435
Potassium Iodate	Calgon	84014
Potassium Iodide	Calgon	84014
Potassium Iodide	JT Baker	91435
Potassium Iodide-Iodate	Betz	89954
Potassium Iodide-Iodate	Betz	84053
Potassium Permanganate	Mallinckrodt	91435
Potassium Phosphate Monobasic	Mallinckrodt	91435
Potassium Thiocuanate, .10 N MD-44	LaMarkKa	91435
Potassium Thoicyanate	JT Baker	91435
Powerplay Wax Stripper	Brulin	90811
Powerplay Wax Stripper	Brulin	90770
Premium Transmission Fluid ATF	Pacer	90770
Premium Transmission Fluid ATF	Pacer	84053
Premium Transmission Fluid ATF	Pacer	90811
Premium Transmission Fluid ATF	Pacer	84014
Prestone II	Union Carbide	90770
Propanol, n-		91435
Propionic Acid	Acetic Bench Unit	91435
Propionitrile	Eastman	91435
Propylbenzene, n-	Aldrich	91435
Propylene		84051
Propylene	Air Products	84051
Propylene	Air Products	93200
Propylene	Amoco	84051
Propylene	Amoco	93200
Propylene	Arco	84051
Propylene	Arco	93200
Propylene	Charter Oil	84051
Propylene	Charter Oil	93200
Propylene	Exxon	84051
Propylene	Exxon	84014
Propylene	Exxon	93200
Propylene Std (C1,C2=,Allene,C3=,C3,iC4)	Scientific Gas Prod	91435
Prussian Blue	Texas Marine Supply	90770
Prussian Blue	Texas Marine Supply	90811
Pulsalube Oil	Pulsa Feeder	84050
Puron 700 Coating		90811
Pyridine	JT Baker	91435
Pyridine	Mallinckrodt	91435
Pyrocatechol Violet	JT Baker	91435
Pyrocatecholsulfonephthalein	Eastman	91435
Quiet Pleas Hospital Disinfectant		84051
RTV Silicon Rubber Sealent	Dow Corning	90770
RTV Silicon Rubber Sealent	Dow Corning	90811
Rainbow Antifog and Cleaner for Glasses	Lens Clean (Vallen)	84053
Rainbow Antifog and Cleaner for Glasses	Lens Clean (Vallen)	90811
Rainbow Antifog and Cleaner for Glasses	Lens Clean (Vallen)	84044
Rainbow Antifog and Cleaner for Glasses	Lens Clean (Vallen)	90770
Rainbow Antifog and Cleaner for Glasses	Lens Clean (Vallen)	84050
Rainbow Antifog and Cleaner for Glasses	Lens Clean (Vallen)	90811
Red Eagle Stencil Ink	Reynolds	84053
Renuzit Air Deodorizer	Drackett	84044
Renuzit Air Deodorizer	Drackett	89513
Renuzit Air Deodorizer	Drackett	84025
Renuzit Air Deodorizer	Drackett	84053

Texas City Chemicals List, by Product 11-6-85

Renuzit Air Deodorizer	Drackett	90811
Renuzit Air Deodorizer	Drackett	91435
Renuzit Air Deodorizer	Drackett	84050
Renuzit Air Deodorizer	Drackett	90770
Residue (Isolated Intermed)	Monsanto	84033
Reynolds Stencil Inc.	Sprayon Products	90770
Rhodium Triiodide	Engelhard	84050
Rhodium Triiodide	Johnson-Matthey	84050
Rhodium Triiodide	PGP	84050
Roebic K-37 Septic Tank Enzymatic	Kernite	90770
Roebic K-37 Septic Tank Enzymatic	Kernite	90811
Ronsonol Lighter Fluid	Ronson	90770
Room Deodorizer	Mydex	90770
Rosanilin, p-	Harleco	91435
Round-Up	Monsanto	90770
Round-Up	Monsanto	90811
Rust Check	Kernite	90770
Rust Runner	Walker Enterprises Inc	90770
Rust Veto	Industrial Material	90811
Rust-Veto	Industrial Material	90770
S'OK Penetrating Oil	Shamrock Specialties	90770
S'OK Penetrating Oil	Shamrock Specialties	84051
S'OK Penetrating Oil	Shamrock Specialties	84044
S'OK Penetrating Oil	Shamrock Specialties	84053
S'OK Penetrating Oil	Shamrock Specialties	84033
S'OK Penetrating Oil	Shamrock Specialties	89513
S'OK Penetrating Oil	Shamrock Specialties	90811
SBS 30 Waterless Skin Cleanser	Jergens	84044
SBS 30 Waterless Skin Cleanser	Jergens	90770
SBS 30 Waterless Skin Cleanser	Jergens	84051
SBS 30 Waterless Skin Cleanser	Jergens	84025
SBS 30 Waterless Skin Cleanser	Jergens	84053
SBS 30 Waterless Skin Cleanser	Jergens	90811
SBS 40 Hand Lotion	Jergens	84053
SBS 41 Medicated Skin Lotion	Jergens	90811
SBS 41 Medicated Skin Lotion	Jergens	90770
SBS 41 Medicated Skin Lotion	Jergens	84053
SC-100 Porcelain Cleaner	All States Chem	91435
SC-100 Porcelain Cleaner	All States Chem	84025
SC-100 Porcelain Cleaner	All States Chem	84053
SC-100 Porcelain Cleaner	All States Chem	89954
SC-100 Porcelain Cleaner	All States Chem	90770
SC-100 Porcelain Cleaner	All States Chem	84051
SC-100 Porcelain Cleaner	All States Chem	93200
SC-100 Porcelain Cleaner	All States Chem	90811
SC-100 Porcelain Cleaner	All States Chem	84050
SC-100 Porcelain Cleaner	All States Chem	84048
SC-100 Porcelain Cleaner	All States Chem	84033
SC-100 Porcelain Cleaner	All States Chem	89513
SC-100 Porcelain Cleaner	All States Chem	90770
SK-2 Lubricant		84051
SL-500 (a.k.a. 5340)	Calgon	84014
SR1 Grease - 2	Chevron	84053
SS-160 Hvy Duty Flr Stripper	All States Chem	84053
SS-160 Hvy Duty Flr Stripper	All States Chem	90811
SS-160 Hvy Duty Flr Stripper	All States Chem	84050

LAM012997

Texas City Chemicals List, by Product 11-6-85

SS-160 Hvy Duty Flr Stripper	All States Chem	90770
Santi-Mist for Athletes Foot	Santi Mist Inc	90811
Santi-Mist for Athletes Foot	Santi Mist Inc	90770
Seal Kote - Coatings	IW Industries	90770
Seal Kote - Coatings	IW Industries	90811
Seldfast Epoxy Adhesive	IW Industries	90770
Sentry Liquid	Airwick	84050
Silastic 732 RTV	Dow Corning	90770
Silica Reag No 1,2,3	Calgon	89954
Silicon Grease		90811
Silver Cyanide	Mallinckrodt	91435
Silver Diethyl Dithiocarbamate	Eastman	91435
Silver Diethyl Dithiocarbamate	JT Baker	91435
Silver Nitrate	Betz	89954
Silver Nitrate	Fisher	84014
Silver Nitrate	LaMarka	84014
Silver Nitrate, .02 N MO-11	LaMarka	91435
Silver Nitrate, .10 N MO-12	LaMarka	91435
Silver Sulfate	Mallinckrodt	91435
Silver, 1000 ppm Std	Harleco	91435
Soap	Hunter Chem	84051
Soap	Zep Mfg	89513
Soda Ash		84056
Soda Ash	Stauffer	84025
Soda Ash	Stauffer	84050
Sodium Acetate	JT Baker	91435
Sodium Arsenite	Fisher	91435
Sodium Arsenite	JT Baker	91435
Sodium Arsenite, 2.0 % MO-45	LaMarka	91435
Sodium Borate	Mallinckrodt	91435
Sodium Bromide	Fisher	91435
Sodium Buffer Soln FA	Calgon	89954
Sodium Burolock 5 Powder	Calgon	84053
Sodium Burolock 5 Powder	Calgon	84014
Sodium Carbonate		84048
Sodium Carbonate	Fisher	91435
Sodium Carbonate	Johns-Manville	84050
Sodium Carbonate	Mallinckrodt	91435
Sodium Carbonate, .2 N MO-53	LaMarka	91435
Sodium Chloride	Fisher	91435
Sodium Chloride	JT Baker	91435
Sodium Chloride	Mallinckrodt	91435
Sodium Diethyldithiocarbamate	Eastman	91435
Sodium Fluoride	JT Baker	91435
Sodium Hexametaphosphate	Dainippon Ink & Chem	84014
Sodium Hexametaphosphate	McKesson	84050
Sodium Hydroxide	Diamond Shamrock	93200
Sodium Hydroxide	Fisher	91435
Sodium Hydroxide	JT Baker	91435
Sodium Hydroxide	Mallinckrodt	91435
Sodium Hydroxide	PPG	84014
Sodium Hydroxide	PPG	84033
Sodium Hydroxide	PPG	84044
Sodium Hydroxide .0507 N	LaMarka	84048
Sodium Hydroxide, .10 N MO-46	LaMarka	91435
Sodium Hydroxide, .500 N MO-8	LaMarka	91435

LAM012998

Texas City Chemicals List, by Product 11-6-85

Sodium Hydroxide, 0.050 N MO-7	LaMarkKa	91435
Sodium Hydroxide, 10% MO-9	LaMarkKa	91435
Sodium Hydroxide, 20 %	Dept 19 Header	84053
Sodium Hydroxide, 20%	Dept 19 Header	84056
Sodium Hydroxide, 20%	Dept 19 Header	89513
Sodium Hydroxide, 20%	Dept 19 Header	84025
Sodium Hydroxide, 20%	Dept 19 Header	84014
Sodium Hydroxide, 20%	Dept 19 Header	89954
Sodium Hydroxide, 20% MO-10	LaMarkKa	91435
Sodium Hydroxide, 50 lb	McKesson	84014
Sodium Iodide	Mallinckrodt	91435
Sodium Metasilicate	JT Baker	91435
Sodium Methoxide .0218 N	LaMarkKa	84048
Sodium Methoxide, .02 N (MeOH) MO-47	LaMarkKa	91435
Sodium Methylate	Fisher	91435
Sodium Molybdate	Fisher	91435
Sodium Nitrate	McKesson	84014
Sodium Nitrate Granules	Olin	84053
Sodium Nitroprusside	Fisher	91435
Sodium Phosphate Dibasic	Fisher	91435
Sodium Phosphate Dibasic	Mallinckrodt	91435
Sodium Phosphate Heptahydrate	Fisher	91435
Sodium Phosphate Heptahydrate	Kodak	91435
Sodium Phosphate Monobasic	JT Baker	91435
Sodium Phosphate Tribasic	Fisher	91435
Sodium Potassium Tartrate	Fisher	91435
Sodium Sulfhydrate	Fisher	91435
Sodium Sulfide	Fisher	91435
Sodium Sulfite	JT Baker	91435
Sodium Sulfite	Mallinckrodt	91435
Sodium Sulphite	McKesson	84014
Sodium Tartrate	Fisher	91435
Sodium Thiosulfate	Betz	84033
Sodium Thiosulfate	Fisher	91435
Sodium Thiosulfate	Fisher	84050
Sodium Thiosulfate	JT Baker	91435
Sodium Thiosulfate, .100 N MO-13	LaMarkKa	91435
Sodium, 1000 ppm Std	Harleco	91435
Sodium, 1000 ppm Std	Scientific Products	91435
Soft Alkyl Benzene	Monsanto CHB	93200
Soldering Paste	All States Chem	90770
Soluble Rhodium Catalyst Complex	Monsanto	84050
Sorb-All Oil Absorbant	Brawner Paper Co	90811
Sorb-All Oil Absorbant	Brawner Paper Co	90770
Spic N Span	Proctor & Gamble	89954
Spic N Span	Proctor & Gamble	93200
Spic N Span	Proctor & Gamble	84053
Spic N Span	Proctor & Gamble	84014
Spic N Span	Proctor & Gamble	84048
Spic N Span	Proctor & Gamble	89513
Spic N Span	Proctor & Gamble	84033
Spic N Span	Proctor & Gamble	84044
Spic N Span	Proctor & Gamble	90811
Spic N Span	Proctor & Gamble	90770
Spic N Span	Proctor & Gamble	84025
Spic N Span	Proctor & Gamble	84051

SC

12055

LAM012999

Texas City Chemicals List, by Product 11-6-85

Splat Welding Aid	Texas Marine Supply	90770
Splat Welding Aid	Texas Marine Supply	90811
Spra Salvo Penetrating Oil	Chesterton	84033
Spra Salvo Penetrating Oil	Chesterton	90770
Spra Salvo Penetrating Oil	Chesterton	90770
Spra Salvo Penetrating Oil	Chesterton	84053
Spra Salvo Penetrating Oil	Chesterton	84051
Spra Salvo Penetrating Oil	Chesterton	90811
Sta-Lo Growth Retardant for Grass	Kernite	90770
Sta-Lo Growth Retardant for Grass	Kernite	90811
Sta-Fut Plummer Putty	Hercules	84053
Standard Phosphate Sol R-5063	Calgon	84053
Stannous Chloride	Mallinckrodt	91435
Stannous Oxalate Catalyst	M & T	84056
Starch	Calgon	84014
Starch Indicator 6 gpl MQ-17	LaMarkKa	84053
Starch Indicator 6 gpl MQ-17	LaMarkKa	91435
Stencil Ink	Marsh Stencil Ink Co	84053
Stokomat 2000	Stockhausen	90770
Styrene	Monsanto	84014
Styrene	Monsanto	89513
Styrene Monomer	Monsanto	91435
Styrene Tar	Monsanto	89954
Styrene Tar	Monsanto	84014
Sudsdawn Formula QR Wax Stripper	Brulin	90770
Sudsdawn Formula QR Wax Stripper	Brulin	90811
Sulfamic Acid	Fisher	91435
Sulfite 3	Betz	84051
Sulfite Indicator # 219	Betz	89954
Sulfite Indicator # 219	Betz	84051
Sulframin HD Detergent Beads		90811
Sulfur Dioxide		84051
Sulfur Dioxide	Stauffer Chem	84053
Sulfuric (Battery) Acid		90811
Sulfuric Acid	Betz	84044
Sulfuric Acid	Dept 19 Header	84033
Sulfuric Acid	Dept 19 Header	84048
Sulfuric Acid	JT Baker	91435
Sulfuric Acid	Mallinckrodt	91435
Sulfuric Acid	Stauffer	84025
Sulfuric Acid	Stauffer Chem	84051
Sulfuric Acid	Stauffer Chem	93200
Sulfuric Acid	Stauffer Chem	89513
Sulfuric Acid	Van Waters & Rogers	84053
Sulfuric Acid .02%	LaMarkKa	89954
Sulfuric Acid 2002	Betz	84025
Sulfuric Acid 2002	Betz	84014
Sulfuric Acid N/50	LaMarkKa	89954
Sulfuric Acid, .020 N MQ-14A	LaMarkKa	91435
Sulfuric Acid, .10 N MQ-49	LaMarkKa	91435
Sulfuric Acid, .250 N MQ-15	LaMarkKa	91435
Sulfuric Acid, 10% w/w MQ-50	LaMarkKa	91435
Super Zepticide	Zep Mfg	84033
Superflake Graphite	Superior Graphite Co	90770
Synfilm LCX Lubricant	Pacer	84051
Syngas	Monsanto	84048

Texas City Chemicals List, by Product 11-6-85

Syngas	Monsanto	84044
TG-10	Calgon	89954
Tap Magic Cutting Oil	Steco	90811
Tap Magic Cutting Oil	Steco	90770
Tap Magic Cutting Oil	Steco	84053
Tat'l Leak Detector	Shamrock Specialties	84050
Tat'l Leak Detector	Shamrock Specialties	90811
Tat'l Leak Detector	Shamrock Specialties	90770
Tat'l Leak Detector	Shamrock Specialties	89513
Tat'l Leak Detector	Shamrock Specialties	84053
Tellurium Dioxide	Asarco	84051
Teresstic 68	Exxon	90770
Terrestrial 32 Oil	Exxon	84050
Terrestrial 68 Oil	Exxon	89513
Terrestrial 68 Oil	Exxon	84014
Terrestrial 68 Oil	Exxon	84044
Terrestrial 68 Oil	Exxon	84051
Tert-Butylcatechol	Neville Synthese Organics	84014
Tertiary Butyl Alcohol, Crude	Monsanto	84025
Tertiary Butyl Alcohol, Product	Monsanto	84025
Tetrabutylammonium Hydroxide in MeOH	JT Baker	91435
Tetramethylammonium Iodide	Southwestern Analytical	91435
Thermal T 150 Oil	Pacer	84044
Thermal T 150 Oil	Pacer	84051
Thermal T 150 Oil	Pacer	84044
Thermal T 315 Oil	Pacer	84050
Thermal T 315 Oil	Pacer	84053
Thermal T 315 Oil	Pacer	84044
Thermal T 315 Oil	Pacer	84053
Thermal T 316 Oil	Pacer	84053
Thermal T 32 Oil	Pacer	89513
Thermal T 465 Oil	Pacer	89513
Thermal T 68 Oil	Pacer	84014
Thermal T 68 Oil	Pacer	84051
Thermal T 700 Oil	Pacer	84051
Therminol Oil	Monsanto	84053
Thymol Blue	Mallinckrodt	91435
Thymol Blue Indicator .1%	LaMarka	84048
Thymol Blue Indicator .1%	LaMarka	91435
Thymolphthalein, .1% (EtOH) MO-25	LaMarka	91435
Thyodine	Fisher	91435
Tide Laundry Detergent	Proctor & Gamble	90770
Tide Laundry Detergent	Proctor & Gamble	90811
Tiger Grip Clear Floor Tile Adhesives	Sherwin-Williams	90811
Tin Metal, 20 Mesh	Fisher	91435
Tin, 1000 ppm Std	American Scientific Prod	91435
Tin, 1000 ppm Std	Harleco	91435
Toilet Bowl Cleaner		91435
Toluene	Fisher	91435
Toluene	Mallinckrodt	91435
Toluene	Monsanto	84014
Toluene	Phillips	91435
Topanol	ICI	84056
Total Residual Gas	Monsanto	84044
Trans X Transmission Tune Up		90811
Transcut Cutting Oil	Texaco	90770
Transcut Cutting Oil	Texaco	90811

LAM013001

Texas City Chemicals List, by Product 11-6-85

Trichelock Chelant Reagent A	Calgon	84044
Trichelock Chelant Reagent A	Calgon	84014
Trichelock Chelant Reagent B	Calgon	84014
Trichelock Chelant Reagent B	Calgon	84044
Trichelock Chelant Reagent C	Calgon	84014
Trichelock Chelant Reagent D	Calgon	84014
Trichelock Chelant Reagent F	Calgon	84044
Trichelock Chelant Reagent F	Calgon	84014
Trichloro-1,2,2-Trifluoroethane, 1,1,2-	Mallinckrodt	91435
Triethanolamine Hydrochloride	Kodak	91435
Triethylbenzene	John Garton	91435
Trimethylpentane, 2,2,4- (Isooctane)	JT Baker	91435
Trisodium Phosphate, 10% w/v MO-51A	LaMarKa	91435
Triton-X	Mallinckrodt	91435
Type H Chemets for Hydrazine	Chemetrics Inc	84044
Un Loc 'K' Thread Dope	Kernite	89513
Un Loc 'K' Thread Dope	Kernite	90811
Un Loc 'K' Thread Dope	Kernite	84051
Un Loc 'K' Thread Dope	Kernite	84053
Un Loc 'K' Thread Dope	Kernite	84033
Undecane, n-	Aldrich	91435
Uni-Fuse Purple Primer P-3000	Sureguard Inc	90770
Untrasonic Conplant	Sonic Control	84033
Uranyl Nitrate	JT Baker	91435
Urea	Fisher	91435
Util! MPC Cleaner	Century Paper	90770
Util! MPC Cleaner	Century Paper	90811
Util! MPC Cleaner	Century Paper	93200
Vacuum Purge Pump Oil	Sargent	84051
Vacuum Purge Pump Oil	Sargent	84025
Vacuum Purge Pump Oil	West Scientific	84025
Valeronitrile	Aldrich	91435
Vanadium Pentoxide Catalyst	Monsanto	84053
Varsol	Pacer	84050
Varsol	Pacer	84025
Varsol	Pacer	90811
Versenate Reagents	LaMarKa	84025
Versenate Buffer Reagent	LaMarKa	84053
Versenate Buffer Reagent	LaMarKa	89954
Versenate Indicator Mower	LaMarKa	89954
Vibra-Clean Waterless Skin Cleanser	Hanlon Chem	90770
Vibra-Clean Waterless Skin Cleanser	Hanlon Chem	90811
Vibra-Clean Waterless Skin Cleanser	Hanlon Chem	84025
Vibra-Clean Waterless Skin Cleanser	Hanlon Chem	84051
Washed Aldehydes	Monsanto	84048
Water Soluble Oil	Texaco	90770
Water Soluble Oil	Texaco	90811
Waylube	Kernite	90770
Waylube	Kernite	90811
Weatherstripping Adhesive	3M	90770
Weld On 711	Industrial Polychemical	90770
Weld On Primer P-70-C	Industrial Polychemical	90770
Weldfast Epoxy Resin	Texas Marine Supply	90811
West Insecticide	West Chemicals	84025
White Bar Soap	Calgon (Texas Marine)	90811
White Bar Soap	Calgon (Texas Marine)	84025

LAM013002

Texas City Chemicals List, by Product 11-6-85

White Bar Soap	Calgon (Texas Marine)	90770
Wilhold Contact Cement		90770
Wilsco 20 Non-Caustic Cleaner	All States Chem	90811
Wilsco 20 Non-Caustic Cleaner	All States Chem	90770
Windex	Drackett	84051
Windex	Drackett	84048
Wipe-A-Way Germ Cleaner	All States Chem	93200
Wipe-A-Way Germ Cleaner	All States Chem	91435
Wipe-A-Way Germ Cleaner	All States Chem	84053
Wipe-A-Way Germ Cleaner	All States Chem	90811
Wipe-A-Way Germ Cleaner	All States Chem	84025
Wipe-A-Way Germ Cleaner	All States Chem	90770
Wipe-A-Way Germ Cleaner	All States Chem	84048
Wipe-A-Way Germ Cleaner	All States Chem	84051
XRF Analyzer		84048
Xerox Copier Dry Ink	Xerox	84048
Xylene, m-	Aldrich	91435
Xylene, o-	Exxon	84053
Xylene, o-	Exxon	93200
Xylene, o-	Phillips	91435
Xylene, p-	Aldrich	91435
Xylene, p-	Eastman	91435
ZRC Cold Galvanizing Compound	ZRC Products	90770
Zep Toilet Bowl Deodorant	Zep Mfg	84053
Zep Toilet Bowl Deodorant	Zep Mfg	84025
Zep Toilet Bowl Deodorant	Zep Mfg	90811
Zep Toilet Bowl Deodorant	Zep Mfg	90770
Zep-O-Pine Deodorizer Liquid	Zep Mfg	84053
Zep-O-Pine Deodorizer Liquid	Zep Mfg	84051
Zep-O-Pine Deodorizer Liquid	Zep Mfg	84025
Zep-O-Pine Deodorizer Liquid	Zep Mfg	90770
Zep-O-Pine Deodorizer Liquid	Zep Mfg	84050
Zep-O-Pine Deodorizer Liquid	Zep Mfg	91435
Zep-O-Pine Deodorizer Liquid	Zep Mfg	90811
Zep-O-Pine Deodorizer Liquid	Zep Mfg	84053
Zep-O-Sector A Spray Insecticide	Zep Mfg	90770
Zep-O-Sector A Spray Insecticide	Zep Mfg	84050
Zep-O-Sector A Spray Insecticide	Zep Mfg	84025
Zep-O-Sector A Spray Insecticide	Zep Mfg	90811
Zep-O-Stat Solid Deodorizer	Zep Mfg	84053
Zep-O-Stat Solid Deodorizer	Zep Mfg	93200
Zep-O-Stat Urinal Block Deodorizer	Zep Mfg	90770
Zep-O-Stat Urinal Block Deodorizer	Zep Mfg	90811
Zepvue Glass Cleaner	Zep Mfg	84033
Zepvue Glass Cleaner	Zep Mfg	93200
Zepvue Glass Cleaner	Zep Mfg	84044
Zepvue Glass Cleaner	Zep Mfg	90811
Zepvue Glass Cleaner	Zep Mfg	84025
Zepvue Glass Cleaner	Zep Mfg	84053
Zepvue Glass Cleaner	Zep Mfg	91435
Zepvue Glass Cleaner	Zep Mfg	90770
Zinc Acetate	JT Baker	91435
Zinc Acetate	Mallinckrodt	91435
Zinc Oxide	Katalco	84044
Zinc Oxide	United Catalyst	84044
Zinc, 1000 ppm Std	Scientific Products	91435

LAM013003

PT Q&A
LIST

SC

12060

LAM013004

MATERIAL

VENDOR

Fluorochemical, FC-43	SM
Zirconium Sulfate	MD McKay
Abietic Acid	Aldrich
Acenaphthylene	Aldrich
Acetovanillone	Aldrich
Aminoacetaldehyde Diethyl Acetal	Aldrich
Aminoacetaldehyde Dimethyl Acetal	Aldrich
Aminoacridine (9-) Hydrochloride Monohydrate	Aldrich
Azobis(2,2-)-(2-Methylpropionitrile)	Aldrich
Benzenedimethanol, 1,4-	Aldrich
Benzhydrol (99 %)	Aldrich
Benzophenone	Aldrich
Benzoquinone Dioxine, p-	Aldrich
Benzyl Alcohol	Aldrich
Benzyl Cyanide (aka Phenylacetone nitrile)	Aldrich
Bibenzyl	Aldrich
Biphenyl	Aldrich
Butylphenol, 2-sec-	Aldrich
Butylphenol, 4-tert- (99 %)	Aldrich
Camphorcarboxylic (Di-3-) Acid 98 %	Aldrich
Cesium Hydroxide	Aldrich
Chloroacetaldehyde Dimethyl Acetal	Aldrich
Chlorobenzotrifluoride, 4-	Aldrich
Chlorobiphenyl, p-	Aldrich
Cobaltic Acetylacetonate	Aldrich
Cresol, o-	Aldrich
Crotonaldehyde, Anhy	Aldrich
Crotononitrile	Aldrich
Cyanonaphthalene, 2-	Aldrich
Cyanonaphthalene, 1-	Aldrich
Cyclohexene(3-)-1-Carbonitrile	Aldrich
Cyclohexene, 1-(4-Tolyl)-1-	Aldrich
Di(2,6-)-tert-Butylphenol	Aldrich
Diantipyrilmethane(4,4-) Monohydrate	Aldrich
Dibenzofuran	Aldrich
Dicyano(1,4-)-2-Butene	Aldrich
Dihydronaphthalene, 1,2-	Aldrich
Diisopropylbenzene, m-	Aldrich
Diisopropylbenzene, p-	Aldrich
Diisopropylidene Acetone	Aldrich
Dimethoxybenzaldehyde, 3,4-	Aldrich
Dimethyl Sulfate	Aldrich
Dimethylnaphthalene, 1,2-	Aldrich
Dimethylnaphthalene, 1,3-	Aldrich
Dimethylnaphthalene, 2,3-	Aldrich
Dinitro(4,6-)-o-Cresol	Aldrich
Diphenic Acid	Aldrich
Diphenyl(1,4-)-1,3-Butadiene	Aldrich
Diphenyl(1,6-)-1,5-Hexadiene	Aldrich
Diphenylacetylene	Aldrich
Diphenylhexatriene, 1,6-	Aldrich
Diphenylhydrazine, 1,2-	Aldrich
Diphenylmethane	Aldrich
Dipyridylamine, 2,2-	Aldrich

Dodecane	Aldrich
Ethylene Glycol Dimethyl Ether	Aldrich
Ethynaphthalene, 1-	Aldrich
Fluorene-carboxylic Acid	Aldrich
Fluorenone, 9-	Aldrich
Gualacol	Aldrich
Heptadecane, n-	Aldrich
Hexachlorocyclopentadiene	Aldrich
Hexadecane	Aldrich
Hexadecene, 1-	Aldrich
Hexadienal, 2,4-	Aldrich
Hexamethylethane	Aldrich
Hydroxybutane(4-)-1-Sulfonic Acid Sodium Salt	Aldrich
Indan	Aldrich
Indanol, 1-	Aldrich
Indanol, 2- 99 %	Aldrich
Indanol, 5- 97 %	Aldrich
Indene	Aldrich
Iodobenzene	Aldrich
Mesitylene	Aldrich
Methyl (1-)-2-Pyrrolidinone	Aldrich
Methyl (4-)-1,3-Dioxane	Aldrich
Methylcyclopentane	Aldrich
Methylnaphthalene, 2-	Aldrich
Morpholine	Aldrich
Naphthalene	Aldrich
Naphthol, 1-	Aldrich
Nitrobenzene	Aldrich
Nonadecane	Aldrich
Nonyl Adlehyde	Aldrich
Octacosane	Aldrich
Octadecane	Aldrich
Palmitic Acid	Aldrich
Pentachloroethane	Aldrich
Pentadecane, n-	Aldrich
Pentanedione, 2,4-	Aldrich
Phenanthrene 98 %	Aldrich
Phenethylalcohol	Aldrich
Phenyl(1-)-3-Butene	Aldrich
Phenylacetic Acid	Aldrich
Phenylacetylene	Aldrich
Pyrene, Puriss	Aldrich
Quinoline	Aldrich
Stearic Acid	Aldrich
Stilbene, cis-	Aldrich
Stilbene, trans-	Aldrich
Syringaldehyde	Aldrich
Terphenyl, p-	Aldrich
Tetracosane	Aldrich
Tetradecane, 1-	Aldrich
Tetrahydropyridine, 1,2,3,6-	Aldrich
Tetrahydrothioamine	Aldrich
Tetramethyl (3,4,7,8-)-1,10-Phenanthroline	Aldrich
Tetraphenyl (1,2,3,4-)-1,3-Cyclopentadiene	Aldrich
Tetraphenylethylene	Aldrich
Theanaphthene	Aldrich

LAM013006

Thianthrene	Aldrich
Thiophene	Aldrich
Toluenesulfonic (p-) Chloride	Aldrich
Tridecane, n-	Aldrich
Trimethoxybenzaldehyde, 3,4,5-	Aldrich
Trimethylbenzene, 1,2,4-	Aldrich
Trimethylnaphthalene, 1,3,7-	Aldrich
Triphenylarsine	Aldrich
Triphenylethylene	Aldrich
Triphenylmethane	Aldrich
Triphenylphosphine	Aldrich
Undecane, n-	Aldrich
Aluminum Acetyl Acetate	Alfa Chem
Aluminum Iodide	Alfa Chem
Aluminum Isopropoxide	Alfa Chem
Antimony(IV) Oxide Ultrapure	Alfa Chem
Cadmium Cyanide	Alfa Chem
Cobalt Cyanide 90 %	Alfa Chem
Cobalt, Powder	Alfa Chem
Copper(II) Thiocyanate 97.5 %	Alfa Chem
Dicyclopentadienylzirconium Dichloride	Alfa Chem
Diethylgermanium Dichloride	Alfa Chem
Diphenyltin Dichloride	Alfa Chem
Ferrous Acetate Anhydrous	Alfa Chem
Ferrous Iodide	Alfa Chem
Ferrous Phosphate	Alfa Chem
Indium Chloride	Alfa Chem
Indium Monochloride	Alfa Chem
Iron (II) Phosphate	Alfa Chem
Manganese (III) Acetylacetonate	Alfa Chem
Methylcyclopentadienylmanganese Tricarbonyl	Alfa Chem
Phenyltin Trichloride	Alfa Chem
Sodium Chlorite	Alfa Chem
Sodium Oxide 98 %	Alfa Chem
Sodium Tetraphenyl Borate	Alfa Chem
Tin (II) Iodide	Alfa Chem
Triphenylchlorosilane	Alfa Chem
Triphenylsilanol	Alfa Chem
Triphenyltin	Alfa Chem
Vanadium Acetylacetonate	Alfa Chem
Vanadium Oxytrifluoride	Alfa Chem
Zinc Iodide	Alfa Chem
Aluminum Bisulfate	Allied
Aluminum Oxide	Allied
Sodium Perborate	Allied
Zinc Stearate	Allied
Iron Acetate (ferric)	Amend Drug
Acrylamide	American Cyanamid
Aluminum Stearate	American Cyanamid
Methyl Methacrylate	American Cyanamid
Benzoic Acid, Primary Std	Analabs
Neopentyl Alcohol	Arapahoe
Molybdenum Iodide	Atomergic
Dimethyldichlorosilane 1% Soln in Benz	Bio-Rad Laboratories
Mercuric Sulfate	British Drug Houses Ltd
Phenyl (-p_-Azophenyl Hydrazine Sulfonic Acid	British Drug Houses Ltd

Aminobenzoic Acid, n-	California Biochemical Re
Zinc Acetate-Carbon Cat. Type R 11 % in	Calsicat
Erythorbic Acid	Chas Pfizer & Co, Inc
Heptanol, 1-	Chem Sample
Hexylbenzene	Chem Sample
Isobutyl Propanoate 96 %	Chem Sample
Methyl (2-)-1-Buten-3-yne	Chem Sample
Methylpyridine, 3-	Chem Sample
Methylpyridine, 4-	Chem Sample
Nonanoic Acid	Chem Sample
Nonanol, 1-	Chem Sample
Nonyl Benzene	Chem Sample
Propyl Propanoate	Chem Sample
Trans-(1,1,3,5-)-Tetramethylcyclohexane	Chem Sample
Tridecylbenzene	Chem Sample
Hydroquinone Monomethyl Ether	Chemetron
Benzothiophene	Chemical Procurement Labs
Methyl Hydrogen Phthalate	Chemical Procurement Labs
Stannous Oxalate	Chemical Procurement Labs
Calcium Oxide	Chemstone
Cyclooctane	Cities Service
Phenylglyoxal	City Chemical
Sodium Persulfate	City Chemical
Molybdenum Bromide	Climax Molybdenum Co
Molybdenyl Bis Acetylacetonate	Climax Molybdenum Co
Butyl Catechol, t-	Coalite
Dichlorobutane, 1,2-	Columbia
Dichlorobutane, 1,3-	Columbia
Dichloropropane, 2,2-	Columbia
Dimethylnaphthalene, 2,3-	Columbia
Dimethylnaphthalene, 2,6-	Columbia
Diphenyldicarboxylic Acid	Columbia
Hexachloropropene	Columbia
Propargyl Chloride	Columbia
Hydroxylammonium Sulfate	Comm Solven
Vanadium 5000 ppm Solution	Conostan
Naphthalene (Crude)	Cooper's Creek Chemical C
Toluic (m-) Acid (3-Methylbenzoic Acid)	Cowles Chem
Toluic (o-) Acid (2-Methylbenzoic Acid)	Cowles Chem
Toluic (p-) Acid (4-Methylbenzoic Acid)	Cowles Chem
Naphthalene (Crude)	Crowley Tar
Nickel Oleate	Delta
Palladium-Silver Paste	DuPont
Platinum Bright (+ Organic Solvents)	DuPont
Titanium Dioxide	DuPont
Titanium Lactate	DuPont
Iron (II) Sulfide 4-20 Mesh	EH Sargent
Tetraphenyl Arsonium Chloride	Eastern
Acetal	Eastman
Acetaldehyde Sodium Bisulfite	Eastman
Acetone Cyanohydrin	Eastman
Acetylenedicarboxylic Acid, K Salt	Eastman
Alanine (DL--, -)	Eastman
Allyl Acetate	Eastman
Aluminum Ethoxide	Eastman
Aluminum Isopropoxide	Eastman

Amino(2-)-2(Hydroxymethyl)-1,3-Propanediol	Eastman
Amino(2-)-2-Methyl-1-Propanol	Eastman
Aminoantipyrine, 4-	Eastman
Aminobenzenethiol, o-	Eastman
Aminobenzothiazole	Eastman
Aminodimethylaniline (p-) Sulfate	Eastman
Aminophenol, p- and o-	Eastman
Aminopyridine, 2-	Eastman
Amonoanthraquinone, 2-	Eastman
Anthracene	Eastman
Anthraquinone	Eastman
Ascorbic Acid (L-(-)-)	Eastman
Aurintricarboxylic Acid - NH4 Salt	Eastman
Azobenzene	Eastman
Azoxydiphenetole(p,p-) Mesamorphic	Eastman
Barbituric Acid	Eastman
Benzenedisulfonic (m-) Acid	Eastman
Benzenesulfonic Acid	Eastman
Benzenethiol	Eastman
Benzhydrol	Eastman
Benzil	Eastman
Benzimidazole	Eastman
Benzoic Anhydride	Eastman
Benzoin	Eastman
Benzophenone	Eastman
Benzotriazole	Eastman
Bi-n-Butyl Maleate	Eastman
Bibenzyl	Eastman
Biphenyl	Eastman
Bromo(1-)-3-Chloropropane	Eastman
Bromoacetophenone	Eastman
Bromobenzene	Eastman
Bromobiphenyl, 4-	Eastman
Bromobutane, 1-	Eastman
Bromochloromethane	Eastman
Bromoethane	Eastman
Bromoethanol, 2-	Eastman
Bromoethyl Benzene	Eastman
Bromohexane, 1-	Eastman
Bromopentane, 1-	Eastman
Bromosuccinimide, n-	Eastman
Bromotoluene	Eastman
Butanetetracarboxylic (1,2,3,4) Acid	Eastman
Butoxyethanol, 2-	Eastman
Butyl Acetate	Eastman
Butyl Chloroformate, n-	Eastman
Butyl Isocyanate	Eastman
Butylamine, s-	Eastman
Butylamine, t-	Eastman
Butylbenzene	Eastman
Butylbenzene, t-	Eastman
Butyraldehyde	Eastman
Butyrolactone, 4-	Eastman
Butyronitrile	Eastman
Caffeine	Eastman
Caprolactam	Eastman

LAM013009

Carboxymethyl (1-) Pyridinium Chloride Dihydrate	Eastman
Chloranil	Eastman
Chloro(1-)-2-Methylpropane	Eastman
Chloro(1-)-2-Propanol w/ Chloropropanol	Eastman
Chloro(2-)-4,6-Dinitrophenol	Eastman
Chloro(2-)-6-Nitrophenol	Eastman
Chloro(2-)-p-Xylene	Eastman
Chloro(3-)-2-Methylpropene	Eastman
Chloro(4-)-2,6-Dinitroaniline	Eastman
Chloro(4-)-2,6-Dinitrophenol	Eastman
Chloro(4-)-2-Nitroaniline	Eastman
Chloroaniline, o-	Eastman
Chloroanisole, p-	Eastman
Chlorobenzene	Eastman
Chlorobutane, 2-	Eastman
Chloroethanol, 2-	Eastman
Chloroethyl (2-) Benzene	Eastman
Chloropentane, 1-	Eastman
Chlorophenol, p-	Eastman
Chloropropane, 2-	Eastman
Chloropropene, 3-	Eastman
Chlororesorcinol, 4-	Eastman
Chlorosuccinimide, m-	Eastman
Cinchonine	Eastman
Cinnamic (trans-) Acid	Eastman
Crotonic Acid, (10 % Water)	Eastman
Cyclohexanecarboxylic Acid	Eastman
Cyclooctadiene, 1,3-	Eastman
Decane	Eastman
Decanoic Acid	Eastman
Decyl Alcohol, n-	Eastman
Di-n-Propyl Sulfate	Eastman
Dibenzofuran	Eastman
Dibromobenzene, p-	Eastman
Dibromobutane, 2,3-	Eastman
Dibromomethane	Eastman
Dibutylamine	Eastman
Dichloro(2,5-)-3,6-Dihydroxy-p-Quinoline	Eastman
Dichloro(trans-1,4-)-2-Butene	Eastman
Dichloro-p-Xylene	Eastman
Dichloroaniline, 2,5-	Eastman
Dichlorobenzene	Eastman
Dichlorobenzene, o-	Eastman
Dichlorobutane, 1,4-	Eastman
Dichlorofluorescein	Eastman
Dichloromethane	Eastman
Dichloropropene(1,2)-1	Eastman
Dichlorotoluene	Eastman
Diethylbenzyl Alcohol	Eastman
Diethyl Carbonate	Eastman
Diethyl Maleate	Eastman
Diethyl Phthalate	Eastman
Diethyl Succinate	Eastman
Diethylamine	Eastman
Diethylaminoethanol, 2-	Eastman
Diethylaminophenol, m-	Eastman

Diethylbenzene	Eastman
Diethyldithiocarbamic Acid Sodium Salt	Eastman
Diethylhydroxylamine, N,N-	Eastman
Dihydrofuran, 2,5-	Eastman
Diiodobenzene, o-	Eastman
Diiodobenzene, p-	Eastman
Diiodomethane	Eastman
Diiodopropane, 1,3-	Eastman
Diisopropylamine	Eastman
Dimethoxybenzoine, 3,5-	Eastman
Dimethoxymethane	Eastman
Dimethoxypropane, 2,2-	Eastman
Dimethyl Phthalate	Eastman
Dimethyl (2,2-)-1,3-Propanediol	Eastman
Dimethyl (N,N)-p-Phenylenediamine	Eastman
Dimethyl (N,N)-p-Phenylenediamine Oxalate	Eastman
Dimethyl (N,N)-p-Phenylenediamine Sulfate	Eastman
Dimethylaminobenzaldehyde, p-	Eastman
Dimethylaminoethanol, 2-	Eastman
Dimethylbenzenesulfonic Acid	Eastman
Dimethylcarbonate	Eastman
Dimethylpentane, 2,4-	Eastman
Dinitro(4,6-)-o-Cresol	Eastman
Dinitroaniline, 2,4-	Eastman
Dinitrobenzoic (3,5-) Acid	Eastman
Dinitrobenzoyl (3,5-) Chloride	Eastman
Dinitrophenyl (2,4-) Hydrazine	Eastman
Dinitrophenylhydrazine, 2,4-	Eastman
Dinitrosopiperazine, 1,4-	Eastman
Dipentene	Eastman
Diphenyl (1,1-)-2-Picrylhydrazine	Eastman
Diphenyl (1,9-)-1,3,6,8-Nonatetraen-3-one	Eastman
Diphenyl (2,2-)-1-Picrylhydrazyl	Eastman
Diphenyl (N,N)-p-Phenylenediamine	Eastman
Diphenyl Phosphite	Eastman
Diphenylacetonitrile	Eastman
Diphenylamine	Eastman
Diphenylcarbohydrazide, 1,5-	Eastman
Diphenylethanol, 1,1-	Eastman
Diphenylethylene, 1,1-	Eastman
Diphenylmethane	Eastman
Dipropyl Phthalate	Eastman
Dipropylamine	Eastman
Dipropylene Glycol	Eastman
Dodecanethiol, 1-	Eastman
Dodecyl Alcohol	Eastman
Dotriacontane	Eastman
Durene	Eastman
Edibromohydrin	Eastman
Eicosanol, 1-	Eastman
Epoxyethylbenzene, 1,2-	Eastman
Erythrosin Disodium Salt	Eastman
Ethoxyethanol, 2-	Eastman
Ethyl (2-)-1-Hexanol	Eastman
Ethyl (3-)-3-Pentanol	Eastman
Ethyl Acetoacetate	Eastman

Ethyl Acrylate	Eastman
Ethyl Benzoate	Eastman
Ethyl Formate	Eastman
Ethyl Methylcarbamate	Eastman
Ethyl Nitrate	Eastman
Ethyl Propionate	Eastman
Ethylacetamine, N-	Eastman
Ethylamine Hydrochloride	Eastman
Ethylanisole, p-	Eastman
Ethylene Carbonate	Eastman
Ethylenedinitrilo(tetraacetic Acid) Disodium Salt	Eastman
Ethylhexanoic (2-) Acid	Eastman
Ethylhexylamine, 2-	Eastman
Ethylidene Diacetate	Eastman
Ethylpyridine, 4-	Eastman
Fluorene	Eastman
Fumaric Acid	Eastman
Furfuryl Alcohol	Eastman
Gluconic Acid	Eastman
Gluconic Acid Sodium Salt	Eastman
Glycidol -	Eastman
Glyoxal	Eastman
Gualacol	Eastman
Guanyurea Sulfate	Eastman
Heptadecanone, 2-	Eastman
Heptanone, 2-	Eastman
Heptanone, 3-	Eastman
Heptanone, 4-	Eastman
Hexachloro-1,3-Butadiene	Eastman
Hexachloro-2-Propanone	Eastman
Hexachlorobenzene	Eastman
Hexachlorocyclohexane (1,2,3,4,5,6-)	Eastman
Hexaethylbenzene	Eastman
Hexamethylenetetramine	Eastman
Hexanediamine, 1,6-	Eastman
Hexanediol, 1,6-	Eastman
Hexanedione, 2,5-	Eastman
Hexanenitrile	Eastman
Hexanitrodiphenylamine (2,2; ,4,4; ,6,6'-)	Eastman
Hexanol	Eastman
Hexyl (N-) Chloroformate	Eastman
Hexyl Acetate	Eastman
Hexyl Alcohol	Eastman
Hydroquinone Dimethyl Ether	Eastman
Hydroxybenzoic(p-) Acid	Eastman
Hydroxycyclohexane(1-) Carbonitrile	Eastman
Iminodiacetic Acid Disodium Salt Monohydrate	Eastman
Iminodiethanol, 2,2-	Eastman
Indandione, 1,3-	Eastman
Indole	Eastman
Iodacetic Acid	Eastman
Iodo(2-)-m-Xylene	Eastman
Iodo(2-)-p-Xylene	Eastman
Iodobenzene	Eastman
Iodobenzoic(p-) Acid	Eastman
Iodobiphenyl, 4-	Eastman

Iodobutane, 1-	Eastman
Iodobutane, 2-	Eastman
Iodoethane	Eastman
Iodoform	Eastman
Iodohexane, 1-	Eastman
Iodonaphthalene, p-	Eastman
Iodooctane, 1-	Eastman
Iodopentane, 1-	Eastman
Iodophenol, o-	Eastman
Iodophenol, p-	Eastman
Iodopropane, 1-	Eastman
Iodopropane, 2-	Eastman
Iodotoluene, m-	Eastman
Iodotoluene, o-	Eastman
Isobutyraldehyde	Eastman
Isopentyl Acetate	Eastman
Isopentyl Nitrite	Eastman
Isophthalic Acid	Eastman
Isopropyl Acetate	Eastman
Isopropylamine	Eastman
Isoquinone-	Eastman
Itaconic Acid	Eastman
Lauric Acid	Eastman
Levulinic Acid	Eastman
Mandelic (DL-) Acid	Eastman
Melamine	Eastman
Mesityl Oxide	Eastman
Mesitylene	Eastman
Methacrylonitrile	Eastman
Methanesulfonic Acid	Eastman
Methoxy(5-)-2-Nitrosophenol	Eastman
Methoxyethanol, 2-	Eastman
Methoxyphenol, p-	Eastman
Methoxypropionitrile, 3-	Eastman
Methyl (2-)-1-Butanol	Eastman
Methyl (3-)-1-Pentyn-3-ol	Eastman
Methyl (3-)-1-Phenyl-2-Pyrazolin-5-one	Eastman
Methyl (3-)-1-Phenyl-5-Pyrazalone	Eastman
Methyl (3-)-2-Butanone	Eastman
Methyl (5-)-4-Nitroso-2-Isopropylphenol	Eastman
Methyl Benzoate	Eastman
Methyl Cyanoacetate	Eastman
Methyl Decanoate	Eastman
Methyl Formate	Eastman
Methyl Hexanoate	Eastman
Methyl Laurate	Eastman
Methyl Octonate	Eastman
Methyl Oleate	Eastman
Methyl Propionate	Eastman
Methyl-3-Cyanopropionate	Eastman
Methyl-p-Nitrobenzoate	Eastman
Methylacetamine, N-	Eastman
Methylbenzylamine, DL-	Eastman
Methylformamide, N-	Eastman
Monostearin	Eastman
Morpholine	Eastman

Mucoxide	Eastman
Naphthalene (2-) Sulfonic Acid	Eastman
Naphthalene Tetrachloride	Eastman
Naphthalenesulfonic (2-) Acid	Eastman
Naphthoic (2-) Acid	Eastman
Naphthyl (1-) Isocyanate	Eastman
Naphthylamine (1-) Hydrochloride	Eastman
Nitrilotri (1,1',1'')-2-Propanol	Eastman
Nitrilotriacetic Acid	Eastman
Nitrilotriethanol (2,2',2'') Hydrochloride	Eastman
Nitrilotriethanol, 2,2',2''	Eastman
Nitro(4-)-o-Phenylenediamine	Eastman
Nitro(5-)-1-Indazole	Eastman
Nitro(5-)-2-Nitrosotoluene	Eastman
Nitroaniline, m-	Eastman
Nitroaniline, o-	Eastman
Nitroanisole, o-	Eastman
Nitroanizone, p-	Eastman
Nitrobenzene	Eastman
Nitrobenzenediazonium (p-) Fluoroborate	Eastman
Nitroethane	Eastman
Nitrophthalic (3-) Anhydride	Eastman
Nitropropane, 2-	Eastman
Nitroresorcinol, 2-	Eastman
Nitrosalicylaloxime, 5-	Eastman
Nitroso (1-)-2-Naphthol	Eastman
Nitrosodiphenylamine, n-	Eastman
Nitrotoluene, o-	Eastman
Octadecanol, 1-	Eastman
Octane	Eastman
Octanoic Acid	Eastman
Octene, 1- and 2-	Eastman
Oxydiethanol, 2,2'-	Eastman
Oxydipropionitrile, 3,3'-	Eastman
Pentadecafluorooctanoic Acid	Eastman
Pentadecaphenol, m-	Eastman
Pentanone, 2-	Eastman
Pentanone, 3-	Eastman
Pentarythritol	Eastman
Pentyl Alcohol	Eastman
Pentylamine	Eastman
Phenacyl Acetate	Eastman
Phenanthrene	Eastman
Phenetole	Eastman
Phenol (p-)-Sulfonic Acid Sodium Salt	Eastman
Phenolphthalein	Eastman
Phenyl (n-)-2-Naphthylamine	Eastman
Phenyl Acetate	Eastman
Phenyl Ether	Eastman
Phenyl Isothiocyanate	Eastman
Phenyl Sulfide	Eastman
Phenyl Sulfoxide	Eastman
Phenylacetonitrile	Eastman
Phenylazoaniline, p-	Eastman
Phenylbenzoate	Eastman
Phenylenediamine, (m-) Dihydrochloride	Eastman

Phenylenediamine, o-	Eastman
Phenylnonane, 1-	Eastman
Phenyltridecane, 1-	Eastman
Phthalic Anhydride	Eastman
Phthalimide	Eastman
Phthalonitrile	Eastman
Picolinic Acid	Eastman
Piperazine, Anhydrous	Eastman
Pimelic Acid	Eastman
Pinene	Eastman
Piperazinedione, 2,5-	Eastman
Propanediol, 1,2-	Eastman
Propionitrile	Eastman
Propyl (n-) Acetate	Eastman
Propyl Propionate	Eastman
Pyridine Hydrochloride	Eastman
Resorcinol	Eastman
Salicylaldehyde	Eastman
Sebacyl Chloride	Eastman
Silver Cyanate	Eastman
Sodium Dithionite	Eastman
Sodium Formaldehyde Bisulfite	Eastman
Sorbic Acid	Eastman
Squalane	Eastman
Succinimide	Eastman
Succinonitrile	Eastman
Terephthalic Acid	Eastman
Tertiary (4-)Butyl Hydrocatechol	Eastman
Tertiary Butyl Alcohol	Eastman
Tetrabutylammonium Iodide	Eastman
Tetrachlorophenol, 2,3,4,6-	Eastman
Tetraethylammonium Chloride	Eastman
Tetraethylammonium Perchlorate	Eastman
Tetrahydrofurfuryl Alcohol	Eastman
Tetraisobutylene	Eastman
Tetramethylenediamine (H ₂ N, N', N''-)	Eastman
Tetraphenyltin	Eastman
Thiophene	Eastman
Toluenethiol, m-	Eastman
Toluenethiol, o-	Eastman
Toluenethiol, p-	Eastman
Toluic (m-) Acid	Eastman
Tolunitrile, p-	Eastman
Tri-N-Butyl Phosphate	Eastman
Tributyl Borate	Eastman
Trichloro(1,1,1-)-2-Methyl-2-Propanol	Eastman
Trichlorobenzene, 1,2,4-	Eastman
Triethyl Orthoformate	Eastman
Triethylamine	Eastman
Triethylbenzene	Eastman
Trifluoroacetic Acid	Eastman
Trifluoroacetic Anhydride	Eastman
Trimellitic Anhydride	Eastman
Trimethyl Phosphite	Eastman
Trimethylhexane, 2,2,5-	Eastman
Trioctylphosphine Oxide	Eastman

Trioxane, 5-	Eastman
Triphenylamine	Eastman
Triphenylarsine	Eastman
Triphenylbismuthine	Eastman
Triphenylethylene	Eastman
Triphenylmethanol	Eastman
Triphenylstilbene	Eastman
Tripropylamine	Eastman
Tristearin	Eastman
Tritolyl Phosphate	Eastman
Undecanoic Acid	Eastman
Undecanone, 2-	Eastman
Valeric Acid	Eastman
Valeric Anhydride	Eastman
Valeric(Iso-) Acid	Eastman
Valeronitrile, n-	Eastman
Valine (DL-)	Eastman
Vinyl Acetate	Eastman
Vinyl Acetate (Stabilized)	Eastman
Vinyl Propionate	Eastman
Xanthidrol	Eastman
Xylene Cyanole	Eastman
Thiodipropionic Acid	Evans Chem
Ammonium Persulfate	EMC Corp
Octyne, 1-	Harman
Octyne, 3-	Harman
Lithium Phosphate	Fielding
Zirconyl Nitrate	Fielding
Acetanilide	Fisher
Acetyl Acetone	Fisher
Allyl Bromide	Fisher
Aluminum Hydroxide A-581	Fisher
Aluminum Metal A-557	Fisher
Aluminum Sulfate A-613	Fisher
Ammonium Bicarbonate A-653	Fisher
Ammonium Carbonate A-656	Fisher
Ammonium Fluoride A-665	Fisher
Ammonium Formate A-666	Fisher
Ammonium Iodide A-937	Fisher
Ammonium Molybdate A-674	Fisher
Ammonium Oxalate A-679	Fisher
Ammonium Vanadate A-714	Fisher
Antimony (Metal)	Fisher
Antimony (Metal) A-846	Fisher
Antimony Oxide A-857	Fisher
Antimony Trichloride A-853	Fisher
Antimony Trioxide A-860	Fisher
Arsenic Pentoxide	Fisher
Arsenous Acid Soln	Fisher
Barbituric Acid	Fisher
Barium Chloride	Fisher
Barium Oxide Mono	Fisher
Benzaldehyde	Fisher
Benzophenone	Fisher
Bismuth Chloride	Fisher
Bismuth Metal	Fisher

Bismuth Nitrate	Fisher
Bismuth Subsalicylate, Purified	Fisher
Boric Acid	Fisher
Boric Anhydride	Fisher
Boron	Fisher
Bromide	Fisher
Bromine Water 50-B-84	Fisher
Bromine Oxide	Fisher
Bromoform B-386	Fisher
Butanol, 1- S-399	Fisher
Butanol, t- A-401	Fisher
Butyl Acetate, n-	Fisher
Butyl Chloride, n-	Fisher
Cadmium Metal	Fisher
Cadmium Nitrate	Fisher
Cadmium Sulfate	Fisher
Calcium Acetate C-46	Fisher
Calcium Carbide C-58	Fisher
Calcium Hypochlorite C-89	Fisher
Calcium Oxalate	Fisher
Calcium Oxide	Fisher
Calcium Oxide, Certified C-117	Fisher
Calcium Oxide, Purified C-120	Fisher
Calcium Phosphate C-124	Fisher
Calcium Silicide C-132	Fisher
Calcium Sulfate C-140	Fisher
Calcium Sulfide C-142	Fisher
Carbon Disulfide	Fisher
Caroxite 20-50 Mesh 7-571	Fisher
Castile Soap	Fisher
Catechol	Fisher
Ceric Sulfate C-258	Fisher
Cerium(ous) Chloride C-252	Fisher
Cesium Chloride C-24	Fisher
Chloral Hydrate, USP C-286	Fisher
Chloronaphthalene N-10	Fisher
Chromic Acid A-100	Fisher
Chromic Nitrate	Fisher
Chromic Oxide	Fisher
Chromic Sulfate C-338	Fisher
Cinchonine C-345	Fisher
Citric Acid, USP A-109	Fisher
Cobalt Metal L-363	Fisher
Cobalt Nitrate	Fisher
Cobalt Nitrate C-378	Fisher
Copper Metal C-431	Fisher
Copper Metal C-434	Fisher
Copper Metal Turnings	Fisher
Copper(ic) Oxide	Fisher
Cumene C-560	Fisher
Cuprous Iodide C-465	Fisher
Cuprous Oxide	Fisher
Cuprous Oxide (Red) C-447	Fisher
Cyclopentanone O-2121	Fisher
DMSO	Fisher
Decalin	Fisher

Dextrose	Fisher
Dichloroacetic Acid	Fisher
Dichlorobenzene, p-	Fisher
Diethanolamine	Fisher
Diethylene Glycol Monoethyl Ether 0-51	Fisher
Dimethylacetamide, N,N-	Fisher
Dimethylamino Azobenzene	Fisher
Diphenylamine	Fisher
Disodium Ethylenediamine Tetraacetate	Fisher
Ethyl Bromide	Fisher
Ethyl Cellulose	Fisher
Ethyl Iodide	Fisher
Ethylene Glycol Monomethyl Ether	Fisher
Ferric Chloride I-88	Fisher
Ferric Oxide (red) I-116	Fisher
Ferric-Ferrous Oxide Black I-119	Fisher
Ferrous Ammonium Sulfate 1-77	Fisher
Ferrous Chloride I-90	Fisher
Fumaric Acid A-120	Fisher
Glutamic (L-(-)-) Acid	Fisher
Glyoxal	Fisher
Guanidine Hydrochloride	Fisher
HI A-135	Fisher
Hemoglobin H-16	Fisher
Hexamethylphosphoramide	Fisher
Hexanes	Fisher
Hydrazine Anhydrous	Fisher
Hydrazine Hydrochloride	Fisher
Hydrazine Hydrate	Fisher
Hydriodic Acid A-145	Fisher
Hydrobromic Acid A-140	Fisher
Hypophosphorous Acid 50% A-154	Fisher
Inositol I-29	Fisher
Iron Metal I-57	Fisher
Isoamyl Acetate	Fisher
Isoamyl Alcohol	Fisher
Isobutanol A-379	Fisher
Isopropyl Acetate 0-3321	Fisher
Lead (Granular) L-24	Fisher
Lead Chromate L-63	Fisher
Lead Dioxide L-67	Fisher
Lead Nitrate L-62	Fisher
Lead Oxide (Mono-Yellow) L-71	Fisher
Linoleic Acid A-165	Fisher
Lithium Acetate L-112	Fisher
Lithium Bromide L-117	Fisher
Lithium Carbonate L-119	Fisher
Lithium Nitrate L-133	Fisher
Lithium Sulfate L-136	Fisher
Magnesium Acetate M-13	Fisher
Magnesium Bromide M-21	Fisher
Magnesium Hydroxide M-42	Fisher
Magnesium Oxide (Light) M-49	Fisher
Magnesium Oxide M-51	Fisher
Magnesium Perchlorate 7-753	Fisher
Magnesium Stearate M-61	Fisher

LAM013018

Magnesium Trisilicate M-71	Fisher
Magnesium Turnings II-11	Fisher
Maleic Anhydride A-168	Fisher
Manganese(ous) Nitrate M-97	Fisher
Manganous Chloride M-87	Fisher
Manoelic Acid A-49	Fisher
Marble (Chips) M-123	Fisher
Mercuric Nitrate M-168	Fisher
Mercurous Chloride M-157	Fisher
Mesitylene O-3455	Fisher
Methenamine H-289	Fisher
Methyl (1-)-2-Pyrrolidinone U-3688	Fisher
Methyl Acetate M-203	Fisher
Methyl Acrylate	Fisher
Methyl Cellulose M-281	Fisher
Methylcyclohexane M-264	Fisher
Molybdic Anhydride A-174	Fisher
Monochloroacetic Acid A-176	Fisher
Monoethanolamine M-251	Fisher
Naphthalene (White)	Fisher
Naphthalene N-136	Fisher
Naphthol, H-12	Fisher
Nickel Sulfate M-73	Fisher
Nickel(ous) Chloride N-54	Fisher
Nickel(ous) Oxide Green N-64	Fisher
Octane O-3480	Fisher
Octanol, 1- A-402	Fisher
Orthotolidine SO-U-14	Fisher
Oxalic Acid A-217	Fisher
Pentane, O-4062	Fisher
Petrolatum USP P-66	Fisher
Phenylenediamine P-94	Fisher
Phenylenediamine, P-96	Fisher
Phosphorus Acid A-246	Fisher
Phosphorus Pentasulfide P-108	Fisher
Phosphorus Trichloride P-110	Fisher
Phthalic Anhydride A-256	Fisher
Potassium Acetate P-171	Fisher
Potassium Borate P-202	Fisher
Potassium Chromate P-220	Fisher
Potassium Iodide P-256	Fisher
Potassium Permanganate P-279	Fisher
Potassium Phosphate, Monobasic P-286	Fisher
Potassium Phosphate, Tribasic P-289	Fisher
Potassium Tartrate, (Neutral) P-313	Fisher
Propanol, 2-	Fisher
Propionic Anhydride O-4312	Fisher
Propylene Carbonate O-4331	Fisher
Quinoline Q-34	Fisher
Quinone Q-36	Fisher
Silicic Acid A-945	Fisher
Soda Line Indicator Grade S-195	Fisher
Sodium Benzoate S-229	Fisher
Sodium Bismuthate S-238	Fisher
Sodium Borohydride S-678	Fisher
Sodium Carbonate S-263	Fisher

SC

12075

LAM013019

Sodium Citrate S-277	Fisher
Sodium Diethyldithiocarbamate S-284	Fisher
Sodium Hypophosphite S-321	Fisher
Sodium Lauryl Sulfate S-329	Fisher
Sodium Metabisulfite S-244	Fisher
Sodium Metaborate S-331	Fisher
Sodium Metal S-206	Fisher
Sodium Metaperiodate S-398	Fisher
Sodium Metaphosphate S-333	Fisher
Sodium Methylate S-335	Fisher
Sodium Molybdate S-336	Fisher
Sodium Permanganate S-362	Fisher
Sodium Phosphate S-373	Fisher
Sodium Phosphate, Tribasic S-377	Fisher
Sodium Phosphite S-378	Fisher
Sodium Pyrophosphate S-390	Fisher
Sodium Silicate Soln SO-8-338	Fisher
Sodium Silicofluoride S-410	Fisher
Sodium Sulfide S-426	Fisher
Sodium Sulfite S-447	Fisher
Sodium Tetraphenyl Boron S-652	Fisher
Sodium Thiocyanate S-441	Fisher
Sodium Tungstate S-449	Fisher
Stannic Chloride T-139	Fisher
Stannic Chloride T-140	Fisher
Stannous Oxide T-150	Fisher
Stannous Sulfate T-154	Fisher
Stearic Acid A-292	Fisher
Sulferated Potash	Fisher
Sulfurous Acid A-307	Fisher
Tartaric Acid A-315	Fisher
Tetrachloroethylene	Fisher
Tetraethylenepentamine T-411	Fisher
Tetrahydronaphthalene T-72	Fisher
Thioacetamide T-102	Fisher
Thionyl Chloride T-104	Fisher
Thiourea T-101	Fisher
Titanium Metal T-305	Fisher
Titanium Sulfate T-319	Fisher
Tolidine(o-) Dihydrochloride T-320	Fisher
Toluene(p-)-Sulfonic Acid A-320	Fisher
Tri-n-Butyl Phosphate B-404	Fisher
Trichloroacetic Acid A-322	Fisher
Trichloroethylene T-341	Fisher
Triphenylchloromethane T-356	Fisher
Vanadium Pentoxide V-7	Fisher
Vavadyl Sulfate V-8	Fisher
Zinc Bromide Z-27	Fisher
Zinc Carbonate Z-30	Fisher
Zinc Chloride Z-33	Fisher
Zinc Iodide N.F. VIII Z-42	Fisher
Zirconium Chloride	Fisher
Zirconium Oxide Z-83	Fisher
Palladium Asbestos P-5	Fisher
Propynallithium	Footo Chem
Ceric Ammonium Sulfate	G. Frederick Smith

Ceric Sulfate	G. Frederick Smith
Hexanol	G. Frederick Smith
Lithium Acetate	G. Frederick Smith
Tertiary (4-)Butyl Catechol	Galland Son
Antimony Sulfate	General Chemical
Dichlorobenzene, p-	General Chemical
Nitrosodiphenylamine, p-	Grant Chem
Dodecene, 1-	Gulf Oil
Octene, 1-	Gulf Oil
Cobaltic Fluoride	Harshaw
Copper Metal Powder	Harshaw
Zirconium Oxide	Harshaw
Methylnaphthalene	Henley
Phenanthrene	Henley
Petroleum Distillate	Humble Oil
Bismuth Oxalate	ICN Pharmaceuticals, Inc
Mercuric Sulfate	ICN Pharmaceuticals, Inc
Nitrosophenol, p-	ICN Pharmaceuticals, Inc
Triolein	ICN Pharmaceuticals, Inc
Acetonitrile HPLC Grade	JT Baker
Aluminum Hydroxide	JT Baker
Aluminum Nitrate	JT Baker
Ammonium Meta-Vanadate	JT Baker
Ammonium Bisulfite	JT Baker
Ammonium Bromide	JT Baker
Ammonium Persulfate	JT Baker
Arsenic Pentoxide	JT Baker
Barium Chromate	JT Baker
Barium Hydroxide	JT Baker
Barium Sulfate	JT Baker
Bibenzyl	JT Baker
Bismuth Nitrate	JT Baker
Bismuth Subcarbonate	JT Baker
Bromoform	JT Baker
Cadmium	JT Baker
Cadmium Oxide	JT Baker
Calcium Hydroxide 94 %	JT Baker
Calcium Oxide	JT Baker
Chlorodlactic Acid	JT Baker
Collodion USP	JT Baker
Cupric Acetate	JT Baker
Cupric Oxide	JT Baker
Cuprous Chloride	JT Baker
Cuprous Cyanide	JT Baker
Dextrose, Anhy Powder	JT Baker
Dimethylglyoxime	JT Baker
Dithizone	JT Baker
Ethyl Iodide	JT Baker
Ethylhexanoic (2-) Acid	JT Baker
Formate	JT Baker
Hexanes	JT Baker
Iron	JT Baker
Lead Oxide (Red)	JT Baker
Lithium Carbonate	JT Baker
Magnesium Oxide (Heavy)	JT Baker
Magnesium Sulfate	JT Baker

Manganese Dioxide	JT Baker
Mercuric Sulfate	JT Baker
Methylactonitrile	JT Baker
Methylpentane, 2-	JT Baker
Molybdic Acid	JT Baker
Nickelous Carbonate	JT Baker
Nickelous Chloride	JT Baker
Nickelous Sulfate	JT Baker
Paraldehyde	JT Baker
Phosphomolybdic Acid	JT Baker
Phosphorus, Amorphous	JT Baker
Potassium Chromate	JT Baker
Potassium Perchlorate	JT Baker
Potassium Thiocyanate	JT Baker
Potassium, Purified	JT Baker
Pyrogallol	JT Baker
Sodium Arsenate, Dibasic	JT Baker
Sodium Bisulfate	JT Baker
Sodium Chromate	JT Baker
Sodium Metabisulfite	JT Baker
Sodium Nitrite	JT Baker
Sodium Tartrate	JT Baker
Sodium Thiocyanate	JT Baker
Strontium Chloride	JT Baker
Tetrachlorophenol, 2,3,4,6-	JT Baker
Triethanolamine	JT Baker
Zinc Oxide	JT Baker
Acetyl Acetone	K & K Labs
Barium Perchlorate	K & K Labs
Benzofuran, 2,3-	K & K Labs
Benzophenone, 3,4-	K & K Labs
Benzoquinoline, 5,5-	K & K Labs
Benzoquinoline, 7,8-	K & K Labs
Biphenyl Alcohol	K & K Labs
Butyl Hydrogen Phthalate, n-	K & K Labs
Butyl Laurate, n-	K & K Labs
Butylpalmitate	K & K Labs
Caprylic(n-) Aldehyde	K & K Labs
Diisopropylbenzene, p-	K & K Labs
Dimethyl(N,M_) Acetamide	K & K Labs
Eicoxanone, 3-	K & K Labs
Heptyl (Di-N_) Phthalate	K & K Labs
Hydroxy(m-) Benzoic Acid	K & K Labs
Lauric Acid	K & K Labs
Methyl Succinate	K & K Labs
Octyl (Di-N-) Ketone	K & K Labs
Pentachloroethane	K & K Labs
Phenium Heptoxide	K & K Labs
Quinoline Sulfate	K & K Labs
Samarium Chloride	K & K Labs
Stearic Acid	K & K Labs
Vinylpyridine, 2- (Monomer)	K & K Labs
Boron Fluoride Ethyl Ether	Kodak
Boron Oxide	Kodak
Butanediol, 1,4-	Kodak
Dicyclopentadienyliron	Kodak

Diphenylmercury	Adcock
Hydrazine	Adcock
Linoleic Acid	Adcock
Phenylphenol, p-	Ames
Naphthalene (Crude)	Eastman
Praseodymium Oxide	Lindsey Chem
Aluminum Potassium Sulfate	Mallinckrodt
Barium Hydroxide	Mallinckrodt
Bismuth Subiodide	Mallinckrodt
Calcium Nitrate	Mallinckrodt
Calcium Phosphate (tribasic)	Mallinckrodt
Chromium Chloride (Granular)	Mallinckrodt
Cobalt Nitrate (crystals)	Mallinckrodt
Ferric Subsulfate (powder)	Mallinckrodt
Ferrous Chloride	Mallinckrodt
Molybdenum Trioxide Cat # 2684	Mallinckrodt
Phosphotungstic Acid (Crystals) AR	Mallinckrodt
Platinum Chloride	Mallinckrodt
Silicic Acid	Mallinckrodt
Sodium Bisulfate	Mallinckrodt
Sodium Cobaltinitrite	Mallinckrodt
Sodium Thiocyanate	Mallinckrodt
Dimethyl (1,5-) -Naphthalene	Man & Res Chem
Hexachlorocyclopentadiene	Man & Res Chem
Aluminum Ammonium Sulfate	Matheson, Coleman & Bell
Aluminum Sodium Sulfate	Matheson, Coleman & Bell
Aminoethanol, 2-	Matheson, Coleman & Bell
Aminophenol, o-	Matheson, Coleman & Bell
Ammonium Bisulfate	Matheson, Coleman & Bell
Ammonium Sulfite	Matheson, Coleman & Bell
Benzamide	Matheson, Coleman & Bell
Benzenephosphinic Acid	Matheson, Coleman & Bell
Benzoquinone, p-	Matheson, Coleman & Bell
Benzylamine	Matheson, Coleman & Bell
Chlorotoluene, p-	Matheson, Coleman & Bell
Chromium Metal	Matheson, Coleman & Bell
Citraconic Anhydride	Matheson, Coleman & Bell
Cobaltous Ammonium Sulfate	Matheson, Coleman & Bell
Cyanuric Acid	Matheson, Coleman & Bell
Cyclohexane	Matheson, Coleman & Bell
Decanol	Matheson, Coleman & Bell
Di-m-Tolyl Carbonate	Matheson, Coleman & Bell
Dichlorobutane, 1,4-	Matheson, Coleman & Bell
Dimethylbutane, 2,3-	Matheson, Coleman & Bell
Dimethylpyridine, 2,6-	Matheson, Coleman & Bell
Dimethyltetrahydro(2,4--Thiophene-1,1-Dioxide	Matheson, Coleman & Bell
Diphenyl	Matheson, Coleman & Bell
Diphenyl (1,3)-2-Propanone	Matheson, Coleman & Bell
Diphenylamine	Matheson, Coleman & Bell
Dodecanethiol, 1-	Matheson, Coleman & Bell
Dodecyl Alcohol	Matheson, Coleman & Bell
Dodecyl Aldehyde, n-	Matheson, Coleman & Bell
Dodecyl Sodium Sulfate	Matheson, Coleman & Bell
Dodecyl (N-) Mercaptan	Matheson, Coleman & Bell
Ethyl (2-)-1-Hexanol	Matheson, Coleman & Bell
Ethylamine	Matheson, Coleman & Bell

Ethylbenzene	Matheson, Coleman & Bell
Ethylene Carbonate	Matheson, Coleman & Bell
Ethylenedinitrilo (2,2,2-1,2,1-trichloroethanol	Matheson, Coleman & Bell
Ferric Oxide	Matheson, Coleman & Bell
Fluoboric Acid 48 %	Matheson, Coleman & Bell
Glycolonitrile	Matheson, Coleman & Bell
Hexachloroethane	Matheson, Coleman & Bell
Hexadecene, 1-	Matheson, Coleman & Bell
Hexen(5-)-2-one	Matheson, Coleman & Bell
Indene	Matheson, Coleman & Bell
Indium Nitrate	Matheson, Coleman & Bell
Iodic Acid (Crystal Powder)	Matheson, Coleman & Bell
Iodine Pentoxide	Matheson, Coleman & Bell
Isoamyl Nitrate	Matheson, Coleman & Bell
Isopropenyl Acetate	Matheson, Coleman & Bell
Isosafrole	Matheson, Coleman & Bell
Maleic Anhydride A-158	Matheson, Coleman & Bell
Mercaptoacetic Acid Sodium Salt	Matheson, Coleman & Bell
Mercuric Sulfate	Matheson, Coleman & Bell
Methyl Crotonate	Matheson, Coleman & Bell
Methyl Methacrylate	Matheson, Coleman & Bell
Methylaminophenol (p-)Sulfate	Matheson, Coleman & Bell
Methylindole	Matheson, Coleman & Bell
Monostearin, 1-	Matheson, Coleman & Bell
Naphthalene (Alpha-) Acetic Acid	Matheson, Coleman & Bell
Nickel Shot	Matheson, Coleman & Bell
Nitrobenzaldehyde, p-	Matheson, Coleman & Bell
Nitrobenzene	Matheson, Coleman & Bell
Octadecene, 1-	Matheson, Coleman & Bell
Octanol, 2-	Matheson, Coleman & Bell
Pentadiene, 1,3-	Matheson, Coleman & Bell
Pentane, 2-	Matheson, Coleman & Bell
Pentanone, 3-	Matheson, Coleman & Bell
Phenolthiazine (Thiodiphenylamine	Matheson, Coleman & Bell
Phenylhydrazine	Matheson, Coleman & Bell
Piperidine	Matheson, Coleman & Bell
Pivalic Acid (Trimethylacetic Acid)	Matheson, Coleman & Bell
Platinum Diaminodinitrite	Matheson, Coleman & Bell
Polyvinyl Alcohol	Matheson, Coleman & Bell
Potassium Arsenate	Matheson, Coleman & Bell
Propionic Acid 99 %	Matheson, Coleman & Bell
Propyl Sulfide	Matheson, Coleman & Bell
Silver Acetate	Matheson, Coleman & Bell
Sodium Borate, Anhydrous	Matheson, Coleman & Bell
Sodium Fluoroborate	Matheson, Coleman & Bell
Sodium Pyrophosphate	Matheson, Coleman & Bell
Sodium Tartrate Neutral Powder	Matheson, Coleman & Bell
Stearic Acid Calcium Salt	Matheson, Coleman & Bell
Stearic Acid Lithium Salt	Matheson, Coleman & Bell
Succinic Anhydride	Matheson, Coleman & Bell
Terephthalic Acid	Matheson, Coleman & Bell
Tetramethylammonium Chloride	Matheson, Coleman & Bell
Thiophene	Matheson, Coleman & Bell
Toluenesulfonic Acid, p-	Matheson, Coleman & Bell
Triacetin	Matheson, Coleman & Bell
Triethanolamine	Matheson, Coleman & Bell

Triethylene Glycol	Matheson, Coleman & Bell
Triethylphosphate	Matheson, Coleman & Bell
Tristearin	Matheson, Coleman & Bell
Undecenoic (10-) Acid	Matheson, Coleman & Bell
Urease	Matheson, Coleman & Bell
Vinylpyridine, 4- (Monomer)	Matheson, Coleman & Bell
Vinylcarbazole, 9- (Monomer)	Matheson, Coleman & Bell
Zinc Cyanide	Matheson, Coleman & Bell
Petrolatum USP	McKesson
Potassium Cyanide	Merck
Potassium Thiocyanate	Merck
Potassium Borohydride	Metal Hydr
Sodium Hydride in Mineral Oil, 55 %	Metal Hydr
Dicyclopentadienylvanadium	Metallomer
Rubidium Nitrate	Millmaster
Cyanuric Acid	Monsanto
Methyl Acetate	Monsanto
Polyphosphoric Acid	Monsanto
Sucrose Std Sample 17	Natl Bureau
Sodium Methylate	Olin Matheson
Trichlorobenzenesulfonic (2,4,6-) Acid	PCR Inc
Allyltrimethyl Aliene	Peninsular
Diisobutylamine	Pennsalt Organic Chemical
Dimethylbutylamine	Pennsalt Organic Chemical
Monoamylamine	Pennsalt Organic Chemical
Monobutylamine	Pennsalt Organic Chemical
Aminophenol, p-	Pfaltz & Bauer
Cuprous Cyanide	Pfaltz & Bauer
Dicyanohydroquinone, 2,6-	Pfaltz & Bauer
Sodium Phenate	Pfaltz & Bauer
Butylbenzene, s-	Phillips
Butylbenzene, t-	Phillips
Cyclopentane	Phillips
Dimethylheptene(2,6-)-3	Phillips
Heptane, n-	Phillips
Heptene, 2-	Phillips
Methylbutene(2-), 1-	Phillips
Methylbutene(2-), 2-	Phillips
Methylcyclohexanes (Mixed)	Phillips
Methylcyclopentane	Phillips
Methylpentane, 3-	Phillips
Methylpentene(2-), 1-	Phillips
Methylpentene(4-), 1-	Phillips
Methylpentene(4-), 2-	Phillips
Octen, n- (Mixed)	Phillips
Octene, 2-	Phillips
Pentane, n-	Phillips
Pentene (cis)-2	Phillips
Pentene, 1-	Phillips
Phenylbutene(1-), 2-	Phillips
Tetradecane, n-	Phillips
Tridecane, n-	Phillips
Trimethylpentane, 2,3,4-	Phillips
Vinylcyclohexene(4-), 1-	Phillips
Xylene, m-	Phillips
Chloroanisole, m-	Pierce Chem

Hexamethyldisiloxane	Fierch Chem
Nitrilotriacetic Acid (Trisodium Salt)	Proctor & Gamble
Copper Powder	RDC/RIC
Zinc Metal (Mossy)	RUC/RIC
Phenanthroline, 1,10-	RT Vanderbilt
Cyanopyridine, 4-	Reilly Coal
Copper Powder 325 Mesh	Research Chem
Ferric Pyrophosphate 98 %	Research Chem
Neodymium Chloride	Research Chem
Nickel Molybdate	Research Chem
Methyl Methacrylate	Rohm & Haas
Phenanthrene	Rutgers
Hexahydropyrene (Symm)	Rutgerswerke
Phenanthracene	Rutgerswerke
Dimethyl-p-Toluidine	Sartomer
Cerium Octoate (6% Cerium)	Shepherd
Copper Acetylacetonate	Shepherd
Magnesium Acetylacetonate	Shepherd
Zinc Acetylacetonate	Shepherd
Zirconium Naphthanate Soln (6.1.2)	Shepherd
Zirconium Neodecanoate Soln (6.1.2)	Shepherd
Zirconium Octoate Soln (6.1.2)	Shepherd
Dimethyl(3,3-)-1-Pentene	Sinclair
Methyl (2-)-2-Butene	Sinclair
Bismuth Trioxide	Soex Industries
Dinitrophenol, 2,4-	South Dyest
Tetramethylammonium Iodide	Southwestern
Molybdenum Trioxide	Spex Industries
Zinc Oxide	St Joseph Lead Co
Di-p-Tolylphosphino(bis)(1,2-)-Ethane	Strem Chem
Diphenyl(bis) 2-Phosphinoethyl Phenylphosphine	Strem Chem
Diphenyl(bis)(1,2)-Phosphinoethane	Strem Chem
Diphenylphosphino (1,3-)-bis Propane	Strem Chem
Mesotetra(4-Pyridyl) Propylene	Strem Chem
Phenanthroline, 1,10-, Nonohydrate	Strem Chem
Tribromoacetic Acid	Strem Chem
Tungsten Metal Powder	Sylvania
Acridine	Terra Chemicals Inc
Diphenic Acid	Terra Chemicals Inc
Fluoranthene Rein	Terra Chemicals Inc
Vinyl(4-)-1-Cyclohexane	Texas US Chemical Co
Zirconium Oxide	Transelco
Mercury Cyclohexanebutyrate	US Bureau of Stds, #1064
Dibutyltin bis(2-Ethylhexanoate)	US Dept of Commerce
Styrene Oxide	Union Carbide
Zirconium Oxide (Powder)	United Catalyst
Aminoacetic Acid	WH Curtin
Dehydrite (Mg Perchlorate-White)	WH Curtin
Iodine-Bromine Hanum Soln	WH Curtin
Iron, Reduced by Hydrogen, NF (Powder)	WH Curtin
Nitrobenzene	WH Curtin
Phenylarsene Oxide Solution	Wallace & Tiernan Inc

HAZARD COMMUNICATION
PROGRAM

MONSANTO TEXAS CITY
(GENERIC PORTION)

LAM012955

SC

12011