OSH INFORMATION MEMORANDUM: 86-X-70 (Revised)

TO: All OSH Compliance Personnel

FROM: William M. Lybrand, Director of OSH

SUBJECT: Inspection Procedure for the Hazard Communication Standard, Section 1910.1200, 1926.59 and 1917.28

DATE: April 22, 1991

A. Purpose of the Standard

The purpose of the HCS is to ensure that the hazards of all chemicals produced or imported are evaluated, and that information concerning their hazards is transmitted to employers and employees.

B. Scope

1. The HCS applies to all chemical manufacturers, distributors and to all employers.

2. Paragraph (b) outlines exemptions to full coverage of the standard. A complete exemption from all requirements of the HCS applies for only those items listed under (b)(6) and should not be confused with the labeling exemptions at (b)(5) which only apply when chemicals are subject to the labeling requirements of certain Federal agencies.

3. Laboratories and sealed containers are dealt with in a limited fashion as per paragraphs (b)(3) and (b)(4).

4. The scope paragraph clearly states that the HCS applies to employers if they know hazardous chemicals are present in a manner that employees may be exposed, regardless of whether the employer has created the chemical exposure. The multi-employer worksite provisions of paragraph (e)(2) ensure that employers are able to obtain the information they need to be able to meet these obligations.

5. In some cases, a hazardous chemical may be present for a long period of time without an employee exposure until repair or demolition activities are performed. By way of example, employers involved in work operations where jackhammers are being used to break up a sidewalk know that they are exposing their employees to a hazardous chemical (silica), even though they did not “bring” the hazard to the site. Even though other provisions of the standard may not be

enforceable (MSDS and labels) the employer should still develop a hazard communication program to inform their employees "about the hazardous chemicals to which they are exposed". Employers may utilize their already existing hazard communication program to communicate information on these types of hazards to their employees, as per paragraph (e)(3).

C. Effective Dates

1. As of November 25, 1985, chemical manufacturers, importers and distributors were required to label shipped containers of hazardous chemicals, and on September 23, 1987, were required to provide MSDS with the next shipment of hazardous chemicals.

2. The HCS has been fully enforceable for all employers in all SICs since March 17, 1989.

D. Employer Responsibilities

1. Suppliers of Hazardous Chemicals

These suppliers include chemical manufacturers and importers who must:

a. perform hazard determinations, and
b. comply with labeling and furnish MSDS.

Distributors must transmit the required information to all employers.

2. Users of Hazardous Chemicals

a. Employers are responsible for transmitting all hazard information to their employees by a comprehensive hazard communication program. The hazard communication program must be in writing and made available to employees and others in accordance with the requirements of 1910.20(e). employers, under their own hazard communication program, are responsible for:

(1) assuring compliance with labeling requirements and other forms of warning;

(2) having a material safety data sheet for each hazardous chemical they use;

(3) providing employees with information and training on hazardous chemicals in their work areas;

(4) identifying all hazardous chemicals known to be present in the workplace;

(5) having methods to inform employees of the hazards of nonroutine tasks and hazards associated with chemicals contained in unlabeled pipes within their work areas, and

(6) having methods to inform contractor employers of chemical hazards that their employees may be exposed to in the manufacturer's work areas and any suggestions of appropriate personal protective equipment.

b. Employers who create hazardous chemicals in-house for exclusive on-site use must comply with the following:

(1) perform hazard determination
(2) comply with the labeling requirements;
(3) complete a MSDS for each hazardous chemical, and
(4) provide hazardous information and training for employees exposed.

3. Recommended Practices for Users

Users of hazardous chemicals are encouraged to:

a. Designate a person(s) responsible for:

(1) ensuring labeling of in-plant and shipped containers;
(2) obtaining and maintaining material safety data sheets;
(3) conducting training;
(4) documenting attempts to obtain MSDSs from manufacturers, importers, and distributors;
(5) documenting employee training; and
(6) determining what chemicals, if any, may be brought on-site by contractors.

b. Require that requests for copies of the written hazard communication program, monitoring results, etc., and the employers response be in writing.

E. "Floor" of Chemicals Considered to be Hazardous

1. Determining which chemicals must be included in a hazard communication program will be an ever-changing process. Employers when initially developing their hazard communication program must include as a "floor" or minimum any chemcial found in the following:

a. Any substance or compound of such substance for which OSHA has a permissible exposure limit (PEL) in Section 1910.1000 or a substance with a specific standard in Subpart Z.

b. Any substance or compound of any substance for which the American Conference of Governmental Industrial Hygienists (ACGIH) has a threshold limit value (TLV) in the latest edition of their annual list.

c. Any substance which the National Toxicology Program (NTP) or the International Agency for Research on Cancer (IARC) has found to be a suspect or confirmed carcinogen. Anything catergorized by IARC as Group I and II are covered, but Group III is not.

2. Users and/or suppliers of any substance not covered by one of the list in E.1 above must conduct further study and evaluation of the substance to determine if it is hazardous. Generally, available sources include the following:

a. NIOSH Registry of Toxic Effects of Chemical Substances;

b. Patty's Industrial Hygiene and Toxicology;

c. Material safety data sheets; and

d. National Library of Medicine (NLM) Services, including the Toxicology Data Bank, TOXLINE and MEDLARS.

F. Clarification and Interpretations

1. (b)(1) – Manufacturers of chemicals for sale or in-house use must comply with the standard.

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

By-products are also covered by the HCS. Employers' hazard determination procedures must anticipate the downstream use of their products and account for any hazardous by-products which may be formed. For example, a manufacturer of gasoline must inform downstream users of the hazards of carbon monoxide, since carbon monoxide is a hazardous chemical and is a "known to be present" by-product resulting from the use of gasoline. Similarly, manufacturers of diesel fuel must inform downstream users of the potential human carcinogenicity of diesel exhaust on

the MSDSs for diesel fuel. (See NIOSH Current Intelligence Bulletin No. 50, August, 1988.)

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

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

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

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

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

Some manufacturers of chemical specialty products have interpreted the laboratory provisions as exempting them from coverage. These operations are considered to be manufacturing processes, and are not exempted. Furthermore, a pilot plant operation is also considered to be a manufacturing operation, not a research laboratory operation.

In addition, establishments such as dental, photofinishing, and optical laboratories clearly are not considered laboratory operations for the purposes of this standard since they are engaged in the production of a finished product.

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

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

Employers are required to obtain a MSDS for chemicals in sealed containers if an employee requests one. The employer's attempt must begin promptly (within a day) in order to be consistent with the requirement that available sheets be accessible during each shift in the work area.

5. (b)(5) – These exemptions apply to labeling requirements of the HCS only and are not intended to provide a complete exemption from the standard.

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

Under the current rule, whenever a consumer product is used in a manner that is not comparable to typical consumer use, it is covered by the HCS. The standard requires

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

Section 311(e)(3) reads as follows:
"Any substance to the extent it is used for personal, family or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public".

According to the Consumer Product Safety Commission hazardous substances intended, or packaged in a form suitable, for use in the household, are usually packaged in containers of less than 5 gallons.

However, the size of the unit or container is not the only index of whether the substance is suitable for use in or around the household; consider whether under any reasonably foreseeable condition of purchase, storage, or use the substance may be found in or around a dwelling.

7. (c) – Definitions:

Article.

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

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

Stainless steel table
Vinyl upholstery
Tires
Adhesive Tape
Furniture
Pencils/Pens
Typewriter Ribbons

NOTE: There has been a lot of controversy about whether or not a brick is an article. Under normal conditions of use, brick are cut using a wet method and special blade.

If CO/IHs find situations where brick is being cut dry, they must contact their supervisor for guidance.

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

> Metal ingots that will be melted under normal conditions of use.
>
> Switches with mercury in them that are installed in a maintenance process when it is known that a certain percent break under normal conditions of use.
>
> Lead acid batteries which have the potential to leak, spill or break during normal conditions of use, including foreseeable emergencies. In addition, lead acid batteries have the potential to emit hydrogen which may result in a fire or explosion upon ignition.

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

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

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

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

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

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

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

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

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

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

Known intermediates and by-products are covered by the HCS. Decomposition products which are produced during the normal use of the product or in foreseeable emergencies (e.g., plastics which are injection molded, diesel fuel emissions) are covered if the hazardous chemicals are known to be present. "Foreseeable

emergency" does not include employee exposures in the event of an accidental fire, but does include equipment failure, rupture of containers, or failure of control equipment which could result in an uncontrolled release of a hazardous chemical.

An employer may rely upon the hazard determination performed by the chemical manufacturer. Normally, the chemical manufacturer possesses knowledge of hazardous intermediates, by-products and decomposition products that can be emitted from his chemical product. However, if the employer obtains information regarding the hazards from a source other than the manufacturer, the employer is responsible for including such information in his hazard communication program.

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

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

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

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

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

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

chemicals, the "Particulates not otherwise regulated" PELs must be included on the MSDSs.

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

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

IARC also stated that there is inadequate evidence to conclude that severely hydrotreated oils are carcinogenic, and that there is no evidence to indicate that severely solvent-refined oils are carcinogenic. In the absence of any valid, positive evidence from sources other than IARC regarding the carcinogenicity of severely hydrotreated or severely solvent-refined oils, no reference to carcinogenicity need be included on the MSDSs and labels for such materials. IARC has also concluded that when oil is refined using sequential processing of mild hydrotreatment and mild solvent refining, there is no evidence of carcinogenicity.

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

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

12. (d)(5) – While the HCS does not require testing of chemicals to determine their hazards, some preparers of MSDSs are apparently considering testing mixtures as a whole so as not to have to list individual hazardous ingredients on the MSDSs. Should employers choose to pursue this option; i.e., to test the mixture as a whole, a full range of tests would have to be performed, including tests to determine health

hazards (acute and chronic) and physical hazards. Employers may also choose to test for certain hazards or properties and rely on the literature for published information on the other hazards. Compliance officers can expect to see MSDSs which use both the tested and untested mixture approaches; e.g., perhaps an employer has determined a flashpoint for the mixture, but has not tested it for health hazards but has relied instead on information in the published literature for this section of the MSDSs. Such an approach to hazard determination is acceptable under the HCS. Where the physical characteristics have not been objectively determined, the employer may present data on the components in ranges; e.g., flash points range from 70 to 100 degrees Fahrenheit.

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

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

14. (e)(1) – All employers with employees who are, or may be, exposed to hazardous chemicals known to be present in their workplaces, must develop, implement, and maintain at primary workplace facilities and fixed worksite locations a written hazard communication program. Programs must be developed whether the employer generates the hazard or the hazard is generated by other employers. An effective program is one that promotes the safe handling and use of hazardous chemicals in the workplace.

15. (e)(2) – Multi-Employer workplaces:
Employers who produce, use, or store hazardous chemicals at a worksite in such a way that employees of other contractors may be exposed must inform the other employers about the hazardous materials, precautionary measures to be taken, and labeling system used.

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

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

An employer must provide other employer(s) MSDSs if the other employer(s) will have employees exposed or potentially exposed. For example, if a painting contractor's workers are using flammable solvents in an area where another sub-contractor's workers are welding pipes, then the painting contractor must ensure that the MSDSs are available. However, if electricians are not working near, or at the same time as, the paving contractor, and therefore it is not possible for either employer's employees to be exposed, then no exchange of MSDSs is required.

The written hazard communication program must be maintained at each workplace where the employer has employees exposed to hazardous chemicals. The program may be anywhere on the jobsite, including in a vehicle, as long as employees know where to find it.

16. (e)(4) – Where employees travel between workplaces during a shift, the written program may be kept at a central location.

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

This citation policy change applies even in situations where the employee does not return to the primary workplace during the work shift as long as the employee(s) is aware of the content of the program and the methods the program contains that affect the sharing of the hazard communication information required at (e)(2)(i-iii). Stated in another way, if hazard communication information (accessibility of MSDSs, the employer's labeling system, etc.) is not being shared with other onsite employers and the employees are unaware of the methods outlined in the program which have been developed to accomplish this intent, then the need for the program to be on-site would

bear a direct relationship to safety and health and the absence of the program on-site would not be a "de minimis" violation.

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

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

The standard's preamble recognizes the existence of numerous labeling systems that are currently in use in industry. Examples include the HMIS (Hazardous Materials Information System), NFPA (National Fire Protection Association) and ANSI (American National Standards Institute) systems. Some of these systems rely on a numerical and/or alphabetic codes to convey the hazards. Although these labeling systems may not convey the target organ effects, the intent of the standard is to permit the use of these systems for in-plant labeling as long as the written Hazard Communication Program adequately addresses the issue.

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

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

However, for shipped containers the hazard warning must be included on the label and must specifically convey the hazards of the chemical. OSHA has consistently

maintained that this includes target organ effects. Casarett and Doull's Toxicology, the Basic Science of Poisons discusses target organs:

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

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

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

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

Exposure calculations are not permitted in determining whether a hazard must appear on a label. If there is a potential for exposure other than in minute, trace or very small quantities, the hazard must be included when substantiated as required by the HCS. Suppliers may not exclude hazards based on presumed levels of exposure downstream (i.e., omitting a carcinogenic hazard warning because, in the supplier's estimate, presumed exposures will not be high enough to cause the effect). The hazard is an intrinsic property of the chemical. Exposure determines degree of risk and should be addressed in training programs by the downstream employer.

The labeling requirements for shipped containers leaving the workplace apply regardless of whether the intended destination is interstate or intrastate. If the shipment is to another establishment, even within the same company, the shipped

labeling provisions apply. Even sealed containers intended for export must comply with the labeling provisions if these containers leave the workplace and if downstream employees such as dock workers may be exposed to the hazardous chemical(s).

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

Although no explicit requirement exists regarding the updating of labels when new information becomes available, the warning would no longer be appropriate if the MSDSs contained new hazard information that needed to be included on the label. Since the MSDSs must be update within three months of receipt of new information, the label must be, too, in order to accurately reflect the MSDSs information. Note that distributors have no affirmative obligation to create the container labeling information for hazardous chemicals, which they merely send unchanged to their customers, but they do have the responsibility to obtain missing labels from the chemical manufacturer/importer. Distributors must duplicate label information on chemicals which they repackage.

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

For purposes of reviewing alternative in-plant labeling methods under (f)(6), the CO/IH shall note that this provision allows alternative means of identification only in the event that an employer chooses to forego labeling an in-plant container under (f)(5). Thus, an employer may not claim that it supplemented its partial compliance with (f)(5)(ii); i.e., labeling only some of the chemical's health hazard warnings, with

one of the alternative means of identification enumerated in (f)(6). The key to evaluating the effectiveness of any alternative labeling method is to determine whether it provides an immediate visual warning of the chemical hazards of the workplace, identifies the applicable chemical and container, and conveys the appropriate hazard warnings. The alternative labeling system must also be readily accessible to all employees in their work area throughout each work shift. For purposes of this provision, the term "other such written materials" does not include material safety data sheets used in lieu of labels.

Carcinogen Labeling.

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

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

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

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

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

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

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

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

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

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

Group 1 – The agent is carcinogenic to humans.

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

Group 2B – The agent is possibly carcinogenic to humans.

Group 3 – The agent is not classifiable as to its carcinogenicity to humans

Group 4 – The agent is probably not carcinogenic to humans.

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

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

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

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

TABLE 1

GUIDANCE FOR MSDS AND LABEL NOTATIONS
FOR CARCINOGENS

Source	MSDS	Label
Regulated by OSHA as a carcinogen	X	X
Listed on NTP Carcinogen Report	X	X
IARC—Group 1	X	X
IARC—Group 2A	X	X
IARC—Group 2B	X	Not Required
IARC—Group 3	Not Required	Not Required

IARC—Group 4	Not Required	Not Required
One Positive Study- Animal Only	X	Not Required
Multiple Animal Studies	X	Depends on weight of evidence; N.O. review needed.
One Positive Study- Some Human Evidence	X	X

Given the above criteria, benzene, which is regulated by OSHA as a carcinogen and for which several valid, positive human studies exist, would require both MSDSs and label notations whereas a substance for which only some animal data exists does not. Polyvinyl resin must be labeled as a carcinogen but final molded and extruded products do not need to be (as per 29 CFR 1910.1017).

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

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

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

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

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

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

The safety and health precautions on the MSDSs must be consistent with the hazards of the chemicals. Some MSDSs include recommendations for protective measures that are for "worst case scenarios," e.g., recommending supplied air suits for products of relatively low toxicity. The HCS requires that accurate information be provided on the MSDSs. This applies as much to "overwarning" on the MSDSs/label as well as the absence of information ("underwarning").

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

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

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

If a hazardous chemical is present in the mixture in reportable quantities (i.e., 0.1 percent for carcinogens, and 1 percent for other health hazards), it must be reported unless the mixture has been tested as a whole or unless the material is bound in such a way that employees cannot be exposed. If there really is <u>no</u> exposure (and the standard defines exposure as including <u>potential</u> as well as measurable exposure by any route of entry), either under normal conditions of use or in a foreseeable emergency, then the chemical is not covered by the standard. (See paragraph (b)(2).) In the case of mixtures that are liquid, this provision has to be considered very carefully. For example, if silica is present in a wet mixture it is possible that, if the mixture dries upon application, there is a potential for the silica to become airborne, and thus a potential for exposure. The presence of silica must be indicated on the MSDSs for the liquid mixture in this situation.

For mixtures, if the employer is assuming the mixture has the same hazards as its hazardous components (i.e., no test data on the mixture as a whole), the data sheets

for the components will satisfy the requirements of the standard for a data sheet for the mixture. These MSDSs must be physically attached to one another and identified in a manner where they can be cross-referenced with the label. This approach is acceptable provided the MSDS sheets include the PEL, TLV, and other exposure limits for each ingredient that has been determined to be a health hazard.

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

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

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

21. (g)(3) – The standard requires that all blocks on a form be completed. Because the standard is performance-oriented, however, employers are free to develop MSDSs in any format they wish (as long as it contains the required information). Computer-generated MSDSs do not have to include fields which do not apply to the chemicals for which it is being used.

22. (g)(4) – Where the evidence can support the fact that a class or family of chemicals presents similar health hazards, it would be appropriate to report those findings on the MSDSs with respect to the entire class or family. Thus, a “generic” MSDS may address a group of complex mixtures, such as crude oil or natural gas, which have similar hazards and characteristics because their chemical ingredients are essentially the same even though the specific composition varies in each mixture.

23. (g)(5) – Paragraph (g)(5) requires new or significant information to be added to the MSDSs within three months. The Air Contaminants Rule, 29 CFR 1910.1000, was promulgated January 19, 1989, and set new PELs for 164 substances not previously regulated by OSHA and lowered the PELs for 212 substances. These new PELs must appear on the MSDSs. The “old” PELs, referred to as the “transitional

limits", air contaminant limits which must be met via the use of engineering controls, may also appear on the MSDSs, but as "new or significant" information regarding the hazard of a chemical, the new PELs must now be included on the MSDSs.

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

24. (g)(6) – This paragraph contains the obligation for an employer to obtain the MSDSs as soon as possible if it was not provided with the shipment. It is not necessary for the employer to perform a hazard determination but only to request the MSDSs. If the container label indicates a hazard, the employer will know an MSDS is necessary.

25. (g)(6) and (g)(7) – Chemical manufacturers and importers have an affirmative duty to provide MSDSs to distributors and employers. Thus, a chemical manufacturer and/or importer shall be cited under (g)(6) if they withhold sending MSDSs to downstream users with an initial shipment or with the first shipment after updating an MSDS, pending a separate payment for the MSDS. Similarly, under (g)(7), distributors have an affirmative duty to provide MSDSs to other distributors and downstream employers and cannot withhold sending the MSDSs pending separate payment.

26. (g)(7) – See Definitions (c), in this Appendix, for a discussion of commercial account. Employers purchasing hazardous chemicals from a retail distributor, whose employees will be required to use those chemicals with a greater frequency and duration of exposure than that of regular consumers, must request the MSDS(s) from the retail distributor in order to provide his employees protection under the HCS.

27. (g)(8) – This provision requires MSDSs or electronically accessible MSDSs to be maintained on site. Readable copies of MSDS(s) must be available onsite. This may be accomplished by the use of computers with printers, microfiche machines, and/or telefax machines, any of which would meet the intent of the standard. The key to compliance with this provision is that employees have no barriers to access to the information and that the MSDSs be available during the work shift. When direct and immediate access to paper or hard-copy MSDSs does not exist, CSHOs should evaluate the performance of the employer's system by requesting a specific MSDS. Mere provisions of the requested information orally via telephone is not acceptable.

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

the MSDSs and be able to get the information when they need it, in order for an employer to be in compliance with the rule.

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

28. (g)(9) – If employees work at more than one site during the shift, they must be able to immediately obtain the MSDSs information in an emergency. While the MSDSs may be maintained at a central location in the primary workplace facility, a representative of the employer must be available at that central location to respond to requests for emergency information via telephone or other means.

29. (g)(10) – Computerized data sheets are permitted as long as they are readily accessible to employees (i.e., employees have been trained and know how to operate the computers or otherwise access the computers or otherwise access the MSDSs files). Many larger firms use terminals in plant and train key employees to access them. This is acceptable, as long as the information can be obtained during any work shift, as required by the HCS. Similarly, the use of telefax machines to obtain MSDSs is acceptable as long as the system is reliable and readily accessible while employees are in their work areas during all work shifts.

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

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

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

If it is determined that an employee has not received training or is not adequately trained, the current employer will be held responsible regardless of who provided the training to the employee. An employer, therefore, has a responsibility to evaluate an employee's level of knowledge with regard to the training and information requirements of the standard, and the employer's own hazard communication program, including previous training the employee may have received. The training requirements also apply if the employer becomes aware via the multi-employer worksite provision of exposure of his employees to hazards for which they have not been previously trained.

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

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

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

Giving an employee a data sheet to read does not satisfy the intent of the standard with regard to training. The training is to be a forum for explaining to employees not only the hazards of the chemicals in their work area, but also how to use the

information generated in the hazard communication program. This can be accomplished in many ways (audiovisuals, classroom instruction, interactive video), and should include an opportunity for employees to ask questions to ensure that they understand the information presented to them.

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

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

Metals

32. When metal stock (i.e. sheet, bar, etc.) is being cold formed, punched, drilled or sawed, labels and MSDSs are not required.

When metal stock is heat treated, welded, cut or brazed, and when grinding is performed, a placard may be used in lieu of a label and a MSDS is required.

G. Interface With Other Standards

The HCS was designed to prevent duplication with other OSHA standards. In some cases an employer's duties under other OSHA standards can be interfaced with requirements of the HCS resulting in simplified compliance.

1. Medical Records Access – The Medical Records Access Standard (1910.20) and the HCS do overlap with regard to MSDS. MSDSs are specifically identified as exposure records under (c)(5)(iii) of 29 CFR 1910.20. Each MSDS received by an employer must be maintained for at least 30 years as required at 1910.20(d)(1)(ii). The Access Standard does offer an alternative to keeping MSDSs as 1910.20(d)(1)(ii)(B), which reads as follows:

> Material safety data sheets and paragraph (c)(5)(iv) records concerning the identity of a substance or agent need not be retained for any specified period as long as some record of the identity (chemical name if known) of the substance or agent, where it was used, and when it was used is retained for at least thirty (30) years.
>
> a. (e)(1)(i) of the HCS requires that employers maintain a list of hazardous chemicals as part of the written hazard communication program.
>
> b. Employers might simplify their responsibilities as they relate to the overlap between these two standards, by incorporating the requirements under 1910.20(d)(1)(ii)(B) with those for (e)(1)(i). That is, the list of hazardous chemicals could include information on where chemicals were

used and for how long. These lists would then have to be kept for at least thirty (30) years.

2. Ethylene Oxide – The Ethylene Oxide (ETO) standard provides a different labeling requirement than the HCS. Labels do not have to be affixed, as they relate to ETO, unless the product is capable of producing employee exposures above the action level (1910.1047(j)(1)(ii)).

3. Other Health Standards – Paragraph (f)(4) of the HCS defers labeling requirements to the specific standard when one exists.

H. Inspection Procedures

Both compliance officers and industrial hygienists will evaluate compliance with this standard during the course of inspections of chemical manufacturers, importers and distributors, non-manufacturing employers, construction, and the Public Sector.

1. Chemical Manufacturers, Importers and Distributors:

a. The Compliance Officer/Industrial Hygienist must determine if hazard determinations were conducted.

b. Determine if MSDSs are provided. A sample of a MSDS must be evaluated to determine if they are accurate and complete.

c. Check containers of chemicals which are ready to be shipped to determine if the labeling requirements have been met.

2. Employers:

a. During the opening conference, the compliance officer/industrial hygienist will review the written hazard communication program, obtain a copy of the list of hazardous chemicals, and review the training program and the material safety data sheets.

(1) Review the hazard communication program to determine if all required elements have been addressed in a way that assures that an effective program has been developed.

(2) Review the training program to determine if all elements of Section (h) are met.

(3) Select for review a sample of the MSDSs. The sample size and sheets selected will depend on the number of chemicals in the workplace, the severity of the hazards involved and the completeness of the MSDSs in

general. The compliance officer/industrial hygienist must determine the following:

(a) Are MSDSs available for all hazardous chemicals? If not, why?

(b) Are MSDSs complete and accurate? If the compliance officer/industrial hygienist questions the accuracy of a MSDS, the compliance officer/industrial hygienist should obtain a copy for further evaluation.

(c) Does the identity of the chemical on the MSDS match the chemical list (inventory)?

(d) Are hazard warnings appropriate?

(e) If a MSDS is not available, the compliance officer/industrial hygienist must obtain the name, address and telephone number of the supplier, and a copy of any documented attempts by the employer to obtain the MSDS.

(4) Does the employer use any "consumer products"? If yes, determine in what quantity, where and how they are used and if they are addressed in the training program. The need for a MSDS will be rare and a determination will be made on a case-by-case basis.

b. During the walkaround the compliance officer/industrial hygienist shall determine the following:

(1) Compliance with the labeling requirements.

(a) Are all required containers labeled?

(b) Does the identity on the container match the MSDS, chemical inventory, batch tickets?

(2) Interview employees to determine:

(a) If they have received training;

(b) If they know the location of and the purpose of the MSDS;

(c) If the MSDSs are accessible during their work shift;

(d) If they are generally familiar with the hazardous properties of the chemicals in their workplace;

(e) If they know the measures to be taken to protect themselves from these hazards, i.e., work practices, emergency procedures, and personal protective equipment to be used.

Employees are not expected to totally recall all information. However, if the compliance officer/industrial hygienist detects a trend in the employee's responses that indicates training is not being conducted or is not effective, a closer review of the written program and the method of instruction may be needed;

(f) Are employees informed about the hazards of nonroutine tasks? For example, cleaning out reactor vessels and the hazards of chemicals in unlabeled pipes; and

(g) If present, the compliance officer/industrial hygienist must also interview employees of on-site contractors to determine if they have been informed of hazards they may be exposed to while performing their work.

c. Although it is not required, if the employer has not designated a person(s) responsible for the hazard communication program, labeling, MSDSs and training, the compliance officer/industrial hygienist shall recommend that the company designate such a person.

I. 1. Chemical manufacturers and importers are required to perform hazard determinations on all chemicals they produced or imported. Hazard determination procedures must be in writing and made available, upon request, to employees, NIOSH and OSHA.

a. If a chemical manufacturer has developed Material Safety Data Sheets (MSDS) but does not have the written procedures available that were used to determine the hazards of the chemical(s), then an apparent violation of (d)(6) exists and shall be recommended for citation. This policy applies also if the chemical manufacturer relies on MSDSs from upstream chemical manufacturers (i.e., a written hazard determination is required, although the manufacturer could simply state that it is relying on the upstream chemical manufacturer's information).

b. If no written procedures are available and the chemical manufacturer has not obtained or developed an MSDS, then apparent violations of (d)(1) and (d)(6) exist and shall be recommended for citations.

c. When deficiencies exist in the chemical manufacturer's or importer's hazard determination, then the <u>specific deficiencies</u> shall be documented and recommended for citation under (d)(2).

d. The employer shall be asked to forward the written hazard determination procedures to the Compliance Manager when they are not immediately available at the establishment. A reasonable time period not exceeding 5 working days shall be allowed for receipt in office.

e. The Department shall determine the adequacy of a company's hazard determination program primarily by assessing the outcome of the determination; i.e., the accuracy of the information on labels and material safety data sheets. The written hazard evaluation procedures are to generally describe the process followed – they do not have to address each chemical evaluated.

(1) Although not required, many companies will keep records of individual chemical evaluations. In the event of a finding by the Compliance Officer/Industrial Hygienist of an inaccurate determination, as indicated by inaccurate information on the MSDS or label, these records may be useful in identifying where the company's evaluation differed from OSHA's and for documentation of appropriate violations.

(2) In general, the hazard evaluation procedure should address the following:

(a) The person(s) responsible for evaluating the chemical(s).

(b) The sources of information to be consulted. Evaluators should have access to a wide range of sources. While well-known chemicals could be adequately evaluated by consulting established reference tests, others will require searches of bibliographic databases.

(c) Criteria to be used to evaluate the studies, including those parameters addressed by the HCS (i.e., statistical significance; conducted according to scientific principles).

(d) A plan for reviewing information to update the MSDS if new and significant health information is found.

J. Citation Policy

The following guidelines shall generally be applied. If deviations appear appropriate, they shall be discussed with the Director.

1. General

Violations of the hazard communication standard shall generally be cited as follows:

a. If an employer refuses to provide specific chemical identity information in a medical emergency (i)(2), the reason shall be evaluated and a willful citation issued if appropriate.

b. If a chemical manufacturer or importer has failed to make a hazard determination, label containers, and has not provided a MSDS, the reason shall be evaluated and a willful citation issued if appropriate.

c. Violations of (i)(2) shall not be grouped.

d. Violations will be cited as serious or other than serious based on the hazard of the substance(s) being used.

2. Citation Guidelines

a. When no program exists cite as follows:

i. Group (e)(1), (e)(1)(i), (e)(1)(ii) as one violation, include (e)(2), if applicable;

ii. Group (g) and (h) as one violation;

iii. Cite (f) as a separate violation.

b. When a program exists but is deficient, cite the appropriate subparagraphs of (e), (f), (g) or (h).

c. If an employer has been unable to obtain an MSDS, but has documented its attempts to obtain one, no citation will be issued.

The CO/IH shall complete and submit a Referral Form (OSHA-90) to the Compliance Manager. The Compliance Manager shall call and send a certified letter to the manufacturer or supplier requesting that the information be provided within 30 days. If the MSDS is not received within 30 days, the guidelines in K will be followed.

K. Referrals

When a business has not provided the MSDS within 30 days, the referral submitted by the Compliance Officer/Industrial Hygienist shall be handled as follows:

1. If the chemical manufacturer, importer or distributor is located in South Carolina, a referral inspection will be conducted and citations issued as appropriate.

2. If the business is located in another state, the referral will be sent to the appropriate state OSH official. If the particular state is under the federal jurisdiction, the referral will be sent to the Columbia Area Office.

3. The OSH Division, South Carolina Department of Labor, Licensing and Regulation will take appropriate action in the response to referrals received from other states whether under state or federal jurisdiction.

APPENDIX B

Dear _____:

A representative of the South Carolina Department of Labor, Licensing and Regulation, OSHA Division, recently _____ with _____, which purchases the following _____ from your company:

LIST CHEMICAL(S)/PRODUCT(S) AND DISCREPANCIES

You are required under OSHA's Hazard Communication Standard to perform hazard determinations, label containers and provide MSDSs for all hazardous _____ which you produce or import. A copy of the standard is provided for your reference. (Please immediately send properly completed Material Safety Data Sheets for the listed above and/or correct the above noted deficiencies and notify me within thirty (30) days stating how corrected.)

Please advise us if you have made a hazard determination for the product listed above in accordance with Appendix A & B.

OPTION (IF APPLICABLE)

(Also, if mineral oil is an ingredient of any, please explain how the mineral oil was hydrotreated, such as mildly or severely and the percent composition.)

If you are a distributor that has simply replaced the product manufacturer's name with you own, then you must provide us with the name and address of chemical manufacturer. This information is needed so we may correspond with them to correct deficiencies.

Thank you for your assistance. If you have questions regarding this matter, please feel free to contact me at (803) 734-9606.

Sincerely,

Anthony Wilks
Compliance Manager

Enclosure

APPENDIX C

GUIDE FOR REVIEWING MSDS COMPLETENESS

Section (g) Material Safety Data Sheets (MSDS)

(1) Do chemical manufacturers and importers have MSDSs for each hazardous chemical produced or imported?

(2) Is each MSDS in English?

Does each MSDS contain at least the following information?

(i) Does each MSDS contain the identity used on the label?

(A) Does each MSDS contain the chemical and common name(s) for single substance hazardous chemicals?

(B) For mixtures tested as a whole:

(1) Does each MSDS contain the chemical and common name(s) of the ingredients which contribute to these known hazards?

(2) Does each MSDS contain the common name(s) of the mixture itself?

(C) For mixtures not tested as a whole:

(1) Does each MSDS contain the chemical and common name(s) of all ingredients which are health hazards (1% or greater), or in the case of carcinogen (0.1% or greater)?

(2) Does each MSDS contain the chemical and common name(s) of all ingredients which have been determined to present a physical hazard when present in the mixture?

(ii) Does each MSDS contain the physical and chemical characteristics of the hazardous chemical (vapor pressure, flash point, etc.)?

(iii) Does each MSDS contain the physical hazards of the hazardous chemical, including the potential for fire, explosion, and reactivity?

(iv) Does each MSDS contain the health hazards of the hazardous chemical (including signs and symptoms, medical conditions aggravated)?

(v) Does each MSDS contain the primary routes of entry?

(vi) Does each MSDS contain the OSHA PEL? The ACGIH TLV? Other exposure limit (including ceiling and other short-term limits)?

(vii) Does each MSDS contain information on carcinogen listings (reference OSHA regulated carcinogens, those indicated in the National Toxicology Program (NTP) annual report and those listed by the International Agency for Research on Carcinogens (IARC))?

NOTE: Negative conclusions regarding carcinogenicity or the fact that there is not information do not have to be reported unless there is a specific blank for carcinogenicity on the form.

(viii) Does each MSDS contain general applicable procedures and precautions for safe handling and use of the chemical (hygienic practices, maintenance and spill procedures)?

(ix) Does each MSDS contain generally applicable control (engineering controls, work practices, or personal protective equipment)?

(x) Does each MSDS contain emergency and first aid procedures?

(xi) Does each MSDS contain date of preparation or last change?

(xii) Does each MSDS contain name, address and telephone number of responsible party?

3. Are all sections of the MSDSs completed?

NOTE: This is for use as an aid on inspections. It is not a form.