

Rules  
Notice of Proposed Hazard Identification  
Rulemaking (Carter / Bingham) Jan, 1981

Withdrawn by Reagan Feb 12, 1981

Reissued Notice of Rulemaking March 19, 1982

<sup>HC</sup> Published for Manufacturing Nov 25, 1983

Fully effective in  
Manufacturing (SIC 20-39) May 25, 1986  
<sub>C.E. Training</sub>  
(manufacturers / producers / importers - Carter  
of chemicals Nov 25, 1985)

Published expanded standard Aug 24, 1987  
Required to be in compliance by May 23, 1988  
Effective Sept 23, 1987

(not enforced by OSHA until Aug 1, 1988  
in non-manufacturing Excluding  
construction)

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N.J. Right to Know signed  
by Klean Aug 29 1983  
(effective 1 and 2 years later)



AFL-CIO ANALYSIS OF OSHA's PROPOSED  
HAZARDS COMMUNICATION/RIGHT-TO-KNOW STANDARD

On March 19, 1982, OSHA finally issued a revised proposed Hazards Communication/Right-to-Know Standard. The "Hazards Communication" proposal is a watered-down substitute for an earlier proposed standard on Hazards Identification issued by Eula Bingham in January, 1981 and withdrawn by the Reagan Administration within weeks of taking office.

The new proposed federal standard was sought by the chemical manufacturers to counter and replace the multitude of conflicting state and local "Right-to-Know laws" that have been won in the last few years. The standard is performance based, limited in scope and does very little to assure that workers are provided adequate information on the identities of workplace chemicals and their hazards. Employers define what constitutes most health hazards, and what sources of information are adequate to evaluate potential hazards. Coverage is limited to SIC Codes 20-39 with the construction, service, agriculture and maritime industries excluded entirely. Unions' right of access to information has been eliminated. And trade secret protection for employers is so broad that most chemical identities may be claimed trade secret. The specifics of the proposed Hazard Communication Standard are outlined below.

#### SCOPE

Industries Covered - The proposed standard imposes requirements on chemical manufacturers and employers in SIC Codes 20-39 (manufacturing).

- Importers of chemicals, construction, maritime, agriculture, service industries and other industries outside SIC Codes 20-39 are not covered by the standard.

- Chemical manufacturers are required to evaluate the hazards of the chemicals which they produce, label containers, prepare material safety data sheets and forward this hazard and identification information to user employers. Employers in SIC Codes 20-39 (including chemical manufacturers) are required to provide information to employees about hazardous chemicals through a hazard communication program, labels, placards, material safety data sheets and information and training.

⑥ - The scope of industries covered under the new proposal is reduced further than the January, 1981 proposal which was also limited in scope. Obligations for importers of chemicals to provide the same information on imported chemicals as domestic manufacturers have been deleted. Requirements for employers in SIC Codes 20-39 to provide hazard and identification information in the absence of such information from the manufacturer have also been removed. And the March, 1982 proposal eliminates even the minimal requirement in industries outside SIC Codes 20-39 to leave labels on containers intact.

Chemicals Covered - All chemicals known to be present in the workplace "in such manner that employees may be exposed under normal conditions of use or in a foreseeable emergency," must be evaluated by manufacturers. Only those chemicals and mixtures meeting the standard's definitions for hazardous are subject to the identification, warning and training provisions.



Specific criteria are set forth for determining physical hazards (i.e. flammability, explosivity). For acute health effects, the ANSI Standard for Precautionary Labeling of Hazardous Chemicals (2129.1 - 1976) is referenced in Appendix A of the standard. But the specific toxicity definitions are not set forth nor is there a requirement to follow these minimal criteria. For chronic health hazards, a listing of target organ categories of the types of chronic hazards that should be considered is set forth. The list includes: 1) hepatotoxic agents; 2) nephrotoxic agents; 3) neurotoxic agents; 4) agents with effects on the blood or hematopoietic system; 5) pulmonary agents; 6) reproductive toxins; 7) cutaneous hazards; and 8) eye hazards. The list is not meant to be all inclusive, but nor is it binding. Carcinogenic hazards are not specifically listed. Further, OSHA has set forth no criteria for evaluating whether or not a substance should be considered a chronic hazard, that determination is left solely to the manufacturer. The manufacturer need only assess effects for which data is "scientifically well established."

- In addition to pure chemicals, mixtures are also covered under the following conditions: 1) any mixture which is comprised of at least one (1) percent (by weight or volume) of any chemical determined to be hazardous shall also be considered hazardous unless the mixture has been evaluated as a whole and the data indicates it is not hazardous or 2) if employee protection necessitates disclosure of hazardous chemicals comprising less than one (1) percent (by weight or volume) of mixture, the Assistant Secretary may lower or eliminate this concentration exemption through rulemaking. In the January, 1981 proposal the cut off point for mixtures which contain carcinogens was 0.1%. Under the present proposal, the 1.0% cut off would exclude many substances which contain significant amounts of potent carcinogens such as benzidine dyes.

Exemptions - Importers of chemicals, the construction, service, agriculture, maritime industries and other industries outside SIC Codes 20-39 are totally excluded from the standard. Further, chemicals developed and used in research laboratories are not covered, nor are chemicals which are foods, drugs, cosmetics or tobacco products intended for personal consumption by employees in the workplace.

#### HAZARD DETERMINATION PROCEDURES

Chemical manufacturers are required to evaluate chemicals which they produce to determine if they are hazardous according to the standard. No specific procedures or criteria for what constitutes an adequate hazard determination are set forth. Rather, the hazard determination procedures are entirely performance oriented with what constitutes an adequate evaluation left totally up to the discretion of the manufacturer. The proposed standard does include a non-mandatory Appendix B - "Hazard Determination Guidelines" which lists possible sources of information, including manufacturer's health and safety studies, standard toxicity texts, ACGIH TLV's, NIOSH publications, and computer bibliographic data bases. However, no minimum or exemplary determination procedures are set forth or required. Such open ended performance requirements render the standard largely unenforceable. Determination of what constitutes an adequate hazard evaluation will only be decided through OSH Review Commission decisions after years of litigation.



## HAZARDS COMMUNICATION PROGRAM

- Each employer in SIC Codes 20-39 (including chemical manufacturers) is required to develop and implement a "hazards communication program" for his/her workplace which meets the criteria specified in the standard through a system of labels, placards, material safety data sheets, and employee information and training.

- The program must include: 1) the procedures the employer will use to determine the hazards of the chemicals which he/she produces; 2) a list of hazardous chemicals known to be present in the workplace which must be made available to employees, their designated representatives and OSHA; and 3) the methods the employer will use to inform employees of the hazards of non-routine tasks such as repair of pipes or cleaning of reactor vessels.

- Employers may rely on existing hazard communications programs which meet the criteria set forth in the standard.

Labels and Placards - The March proposal places minimal importance on labels and relies on safety data sheets to convey most identity, hazard and control information.

- Employers must label containers of hazardous chemicals in the workplace with the chemical name, common name, code name or trade name of hazardous chemicals, and hazard warnings for those chemicals. The name which appears on the label must key into the material safety data sheet, but for trade secrets specific chemical identity may be withheld entirely. The hazard warning requirements are performance oriented, left entirely to the discretion of the employer.

- Containers of hazardous chemicals which leave the workplace must contain the above information and the name, address and telephone number of the manufacturer.

- Transfer containers of 10 gallons or less into which chemicals are transferred from labeled containers need not be labeled if intended for the immediate use by the employee who performs the transfer.

- Placards may be used in place of labels for stationary containers in a work area having similar contents and hazards.

- Pipes and piping systems are not considered "containers" and are exempt from the standard.

Material Safety Data Sheets - Under the March proposal material safety data sheets (MSDS's) are the primary vehicle for transmitting hazard information. However, the requirements for responsibility, contents, and timeliness are confusing and somewhat vague.

- All manufacturing employers are required to obtain or develop a material safety data sheet for each hazardous chemical produced or used. However, in



practice the primary responsibility for development of MSDS's will rest with chemical manufacturers. No specific format for MSDS's is set forth but they must reflect information contained in sources used by the chemical manufacturer in his/her hazard determination and the other following information: 1) the chemical and common name(s), CAS number(s) and identify for all hazardous ingredients (over 1 percent) except for trade secrets; 2) physical and chemical characteristics; 3) physical hazards; 4) known acute and chronic health effects, signs and symptoms of exposure, and medical conditions which may be aggravated by exposure; 5) primary routes of entry and existing PEL's; 6) precautions for safe handling and use; 7) recommended engineering controls; 8) recommended work practices; 9) recommended personal protective equipment; 10) emergency and first aid procedures; 11) the date of preparation of the MSDS; and 12) the name, address and telephone number of the manufacturer preparing the sheet.

- For MSDS prepared after the standard is in effect, the MSDS must indicate where a search was conducted but no information was found.

- For existing MSDS's, for blank spaces for the above categories of information, there will be an assumption that the information was sought, but not found. Updated MSDS's must be filled in with information or indicate that information is not available. This section seems to allow manufacturers to rely on old, inadequate safety data sheets until the MSDS's are updated.

- Employers are only required to add "new and significant" information regarding health hazards to the MSDS within a "reasonable period of time". No indication of what constitutes a reasonable period of time is provided.

- Chemical manufacturers must provide manufacturing employers an MSDS with the initial shipment and with the first shipment after the MSDS is updated. If an MSDS is not provided, the purchasing employer must obtain one from the manufacturer "as soon as possible". No definition of "as soon as possible" is provided.

- Employers must maintain and have readily accessible copies of MSDS's in the workplace only as long as the substance is present in the workplace or until the MSDS is replaced by an updated copy. This provision conflicts with the 30-year retention period under the Access to Medical and Exposure Records Standard.

- MSDS's must be made available to exposed employees, their designated representatives and upon request OSHA and NIOSH. Former employees or employees about to be assigned to a new work area are not covered. No mention is made of the right to obtain copies of MSDS's, nor is any time period for providing access set forth. Also, the proposed standard eliminates unions automatic rights of access to information. Under this standard, unions are given the same status as all other designated representatives and have no access rights unless they obtain explicit written authorization from individual exposed employees to exercise their rights under the standard.

Employee Information and Training - Employers must provide employees with information and training on hazardous chemicals in the workplace at the time of their initial assignment and whenever a new hazardous chemical is introduced in their work area. Regular, follow-up training (i.e. annual) on chemical hazards is not required.



Workers must be informed of: 1) the requirements of the standard, 2) operations in the work area where hazardous chemicals are present and; 3) the location and availability of the list of hazardous chemicals and material safety data sheets.

- Worker training programs must include: 1) methods and observations the worker may use to detect hazardous chemicals; 2) the hazards of the chemicals in the workplace; 3) measures employees can take to protect themselves from chemical hazards; and 4) details of the employer's hazard communication program and how employees can obtain and use the appropriate hazard information. Discussion of the employer's program to control chemical hazards is not required, nor is discussion of OSHA requirements for control of individual chemicals.

#### TRADE SECRETS

The trade secret provisions of the March, 1982 proposed standard allow employers to claim almost all specific chemical identities trade secret at their discretion. This marks a complete reversal in OSHA's earlier position in its January, 1980 proposal which found that worker health interests outweighed trade secret claims and required specific chemical identity for all hazardous chemicals.

The current proposal allows specific chemical identity to be withheld if the employer considers the identity a trade secret and if the following conditions are met: 1) the employer can substantiate that it is a trade secret; 2) the chemical is not a carcinogen, mutagen, teratogen, or a cause of significant irreversible damage to human organs or body systems for which there is a need to know the precise chemical name; 3) the chemical is identified by a generic chemical classification which would provide useful information to a health professional; 4) all other information on the chemicals' property and effects is contained in the MSDS; 5) the MSDS indicates which category of information is being withheld on trade secret grounds; and 6) trade secret information must be provided to a treating physician who states in writing that a patient's health problems may be the result of occupational exposure. Employers may establish conditions for the disclosure of trade secret information to employees, designated representatives and down-stream employers through a confidentiality agreement. The agreement may restrict the use of the information, prohibit further release of the information and provide for compensation or other legal relief if harm results from a breach of the agreement. In summary, employers may claim most chemicals' identity trade secret; trade secrets need be substantiated only after the fact; employers determine whether there is a need to release identity of even the most hazardous of substances and what constitutes sufficient alternate identification; and workers and unions may be subject to potential severe liability if information which the employer deems trade secret is released.

#### EFFECTIVE DATES

Effective dates of the standards provisions are variable depending upon the employer's responsibilities, employment size, and the nature of the chemical. The time frames are as follows:



Employer number of employees	Pure substances	Mixtures
Chemical manufacturers:		
More than 250 . . . . .	1 year . . . . .	2 years . . . . .
25 to 250 . . . . .	1 1/2 years. . . . .	2 1/2 years . . . . .
Fewer than 25 . . . . .	2 years. . . . .	3 years . . . . .
Other employers. . . . .	3 1/2 years. . . . .	3 1/2 years . . . . .

#### DEADLINES FOR COMMENTS, HEARING DATES, ETC.

Hearings on the proposed standard are currently scheduled to begin June 15, 1982 in Washington, D. C. Subsequent field hearings are planned, but the locations and dates have not yet been announced.

Comments and notices of intention to appear at the hearings are due May 18, 1982. Testimony and documentary evidence for the hearings are due June 1, 1982.

April 15, 1982

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opeiu #2, afl-cio



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### GROUPS ATTACK OSHA's "RIGHT-TO-HIDE" REGULATIONS

A coalition of groups including the Public Citizen Health Research Group, District 8 Council of the Oil, Chemical, and Atomic Workers Union, and ten Committees on Occupational Safety and Health (COSH groups) filed a lawsuit today with the U.S. Court of Appeals (3rd circuit, Philadelphia) to challenge the new labelling standard announced by OSHA today. The coalition charged that the regulation fails to provide workers with adequate information about hazardous chemicals to which they are exposed in the workplace.

The ten COSH groups -- CACOSH (Chicago), NYCOSH, NY State COSH, ConnectiCOSH, NCOSH (North Carolina), TNCOSH (Tennessee), Washington Area COSH (D.C.), Western Pennsylvania Committee for Worker Safety and Health, WISCOSH, and PhilaPOSH -- are non-profit organizations representing over a hundred unions and hundreds of thousands of workers around the country in a variety of industries and professions, including printers, teachers, firefighters, teamsters, butchers, hatters, autoworkers, hospital personnel, railroad workers, construction workers, plumbers, and the public sector. Many COSH groups have actively participated in state and local right-to-know legislation.

Public Citizen Health Research Group is a non-profit organization that engages in research and advocacy on occupational health issues. Seven years ago, the Health Research Group petitioned OSHA asking for a standard that would require labelling of every workplace chemical and, on September 27, 1979, along with Congressman Andrew Maguire and PhilaPOSH, demanded OSHA to take action on the 1976 petition in a lawsuit against Ray Marshall, the Secretary of Labor. Although OSHA initially refused to put out such a standard, a strong chemical labelling standard was proposed in 1981 by the Carter Administration, but was withdrawn in March 1982 by the Reagan administration.

A study by the Bureau of Labor Statistics in 1976 estimated that more than 180,000 illnesses were due to chemical exposures in the workplace between 1976 and 1977. According to the National Institute for Occupational Safety and Health, ninety percent of workers and their employers are generally unaware of the presence of hazardous chemicals in the workplace and the potential of these chemicals to seriously injure worker health.



Providing workers with the names of these chemicals enables them to:

- Assist health professions in discovering links between illness and specific chemicals
- Helps physicians treat workers who have contracted illnesses due to toxic substances at the job site.
- Search the literature for hazards of which the employer may not be aware.
- Make informed choices about whether to continue to work or to bring compensation claims against a employer.

However, serious deficiencies in the new regulation have provoked labor advocates to raise serious questions as to whether it will have beneficial consequences for many workers. The four most serious deficiencies are that:

- 1) The majority of the workforce will not be affected by the law, which applies only to manufacturing industries.
- 2) The regulation does not require employers to inform workers about chemicals which are not hazardous in their (the employer's) "professional judgment".
- 3) The regulation excludes workers from being given the names of chemicals that are considered trade secrets by the company.
- 4) Many of the more stringent state and local laws will be pre-empted by the weaker provisions of the federal law (at present, approximately 15 state and 35 local laws are in effect around the country). For example, the New Jersey right-to-know law requires employers to label all chemicals in the workplace.

Although the New Jersey law is considered to be the toughest in the country, most state and local laws require employers to provide information about a defined list of hazardous substances. The Illinois and New York right-to-know standards cover more than 57,000 chemicals listed in the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). Some laws, for example those in Connecticut, Cincinnati, West Virginia, and Wisconsin, include approximately 450 substances covered by OSHA regulations in Title 29 of the Code of Federal Regulations, Part 1910, Subpart Z. A number of the existing right-to-know laws contain provisions for expanding the list of reportable chemicals; some of them also provide for public access to right-to-know legislation.

Almost all right-to-know laws contain trade secret provisions but at least some of these require the validity of such claims to be determined by state or local enforcement agencies -- and not the employer or manufacturer. All other information except the name of the chemical must be provided. The Cincinnati law places the burden of proof in establishing trade secret claims on the employer. In New Jersey, there is a special hazardous substance list developed by the Department of Environmental Health that is exempt from trade secret claims.

The regulation makes a mockery out of the right-to-know concept and should be renamed the "right-to-hide". It will prevent millions of workers from taking an active part in personally or collectively "regulating" workplace health by keeping critical information a secret.



ROBERT E. WAGES  
ASSISTANT TO PRESIDENT ROBERT F. GOSS,  
OIL, CHEMICAL AND ATOMIC WORKERS INTERNATIONAL UNION  
ON JULY 14, 1982, AT HOUSTON, TEXAS

For immediate release

OCAW is strongly opposed to OSHA's proposed regulation on HAZARD COMMUNICATION, the Reagan Administration's response to the nationwide demand for the workers' right to know.

"This proposal on Hazard Communication is indicative of this Administration's contempt for the workers' right to know and take part in decisions affecting health on the job" commented Robert Goss, OCAW president.

It is a sham and hypocritical for this Administration to talk euphemistically about programs like Star, Praise and Prime that promote joint labor-management cooperation when the very basis of any cooperation - knowledge - is denied.

Essentially what OSHA is doing with this proposal is turning over to industry its own legal responsibility of policing the workplace.

The Hazard Communication proposal leaves to the manufacturer's discretion which workplace substances will be considered hazardous, what type of hazard information will be given to employees and in what format.

In short, the proposal ignores the history of occupational health experience in this country. Had employers revealed what they knew, tragedies such as that caused by vinyl chloride, asbestos, DBCP may have been prevented. OCAW's experience is that the informed worker takes action; a worker kept in the dark is complacent.

In the absence of effective federal regulation, OCAW can only lend support to the many community and regional right to know

proposals that are being enacted throughout the country.

Finally, OCAW believes this proposal is a dangerous one. It creates an illusion to the public that this Administration is doing something to protect workers.

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# News

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of Labor



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## OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

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November 22, 1983

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## OSHA ISSUES FINAL HAZARD COMMUNICATION STANDARD

More than 14 million workers in 300,000 manufacturing establishments will gain greater access to information on the chemical hazards with which they work under a new Occupational Safety and Health Administration standard, the Department of Labor announced today.

"I believe this is the most significant regulatory action ever taken by OSHA," said Assistant Secretary of Labor Thorne G. Auchter, who heads OSHA. "The hazard communication standard will require that people who work with hazardous substances are aware of the dangers and are trained to effectively protect themselves.

"We estimate there may be as many as 575,000 chemical products in American workplaces, with new chemicals being introduced every day. Workers need to know which chemicals are hazardous and how to protect themselves against those hazards. The three components of OSHA's hazard communication program -- labels or other signs, material safety data sheets and worker training -- will meet this need.

"This standard represents an approach to regulation designed to respond to evolving workplace conditions," Auchter added. "It is an approach endorsed by mainstream safety and health professionals in government, labor and management.

"It also underscores our commitment in this administration to provide basic, useful safety and health information directly to the people who need it -- the working men and women of this country. This standard differs from a proposed labeling standard issued in the final week of the previous administration in that it doesn't rely exclusively on technical information about chemical substances printed on labels. This standard mandates communication about workplace hazards between employers and employees. That is a major step toward improved safety and health."

Auchter noted that this action comes less than three weeks after the Labor Department published an emergency temporary standard reducing by 75 percent the permissible exposure limit to cancer-causing asbestos fibers. That standard, said Auchter, was intended to achieve an immediate reduction of risk to exposed workers and, like hazard communication, it required comprehensive hazard awareness and safety training for workers.

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"Awareness is the first and best step toward improved safety and health," Auchter said. He added that a Bureau of Labor Statistics survey showing significant reductions in workplace injuries and illnesses in 1982 and his own agency's fiscal year 1983 data showing increased OSHA consultation and training efforts and a higher enforcement presence in high hazard industries, indicate that American workers and employers are rapidly reducing workplace hazards. "This new hazard communication standard will greatly accelerate that kind of real progress," Auchter predicted.

Under the standard labels on containers of hazardous chemicals will provide an immediate warning to the worker. More detailed information on the chemical and its hazards, will be available on a material safety data sheet, which the employer will keep readily accessible. The worker will be trained to interpret and understand labels and material safety data sheets, and to safely handle hazardous substances.

The hazard communication program is designed to be a valuable tool for both employers and employees in implementing or strengthening occupational health programs, which help reduce occupational illnesses and injuries resulting from chemical exposures.

The standard will set forth uniform national requirements for hazard communication. Many states and localities already have in place or are considering similar statutes. OSHA's standard will preempt these laws in states which do not have OSHA approved job safety and health plans.

Specifically, by November 25, 1985, OSHA's hazard communication standard requires chemical manufacturers and importers to assess the hazards of chemicals they sell. They are to provide hazard information through warning labels affixed to all containers of their products and through provision of material safety data sheets to all employers in manufacturing establishments in Standard Industrial Classification (SIC) codes 20-39. Labels are to include the identity of the chemical, hazard warnings and the name and address of the manufacturer, importer or responsible party. Chemical distributors also must adhere to the labeling requirements and must ensure that material safety data sheets are provided as required. For stationary containers, signs, placards, process sheets, batch tickets, etc., may be used.

By May 27, 1986, manufacturing employers are required to label certain in-plant containers, to inform workers of hazards within their work areas, to make material safety data sheets or comparable written information available to employees, and to train workers to protect themselves when dealing with specific chemical hazards. Employers must develop written hazard communication programs outlining their plans to accomplish these objectives.

The standard sets a "floor" of about 600 substances regulated by OSHA or listed as hazards by the American Conference of Governmental Industrial Hygienists which will automatically be considered hazardous. It also includes criteria for determining health hazards. The chemical manufacturer will have to evaluate all its chemicals to determine whether they pose such hazards. In determining carcinogenicity, the chemical manufacturer/importer must at least treat OSHA-regulated carcinogens and any substances listed as such by the National Toxicology

Program or the International Agency For Research on Cancer. Mixtures are treated differently depending on whether there is data on the mixture or only on its individual components and on whether there is a physical or a health hazard involved.

Detailed provisions are included in the standard for protecting bona fide trade secrets, and disclosing necessary information to health professionals providing occupational health services to exposed employees. In emergencies, chemical manufacturers and importers must reveal the specific chemical identity of a hazardous chemical to treating physicians and nurses on request. In non-emergency situations, health professionals must justify in writing the need for the specific identity of any chemical a manufacturer or importer claims is a trade secret and provide written assurance that confidentiality will be maintained.

The standard authorizes the use of confidentiality agreements to protect trade secret information. In any case, the chemical manufacturer or importer must disclose the hazards posed by a chemical regardless of its trade secret status. The standard gives OSHA access to trade secrets when necessary. It also specifies the administrative review and enforcement procedures that are in place to handle disputed trade secret claims.

Initial costs of the standard are expected to be \$603.926 million or \$43 per employee with annual costs of \$158.87 million or \$11 per employee--slightly higher than costs anticipated in the proposal. These costs represent less than one-quarter of the initial cost of the labelling proposal issued by the previous Administration and less than 15 percent of the annual costs expected under that proposal.

Benefits of the hazard communication standard include increased employee awareness of hazards and increased compliance with protective measures. These in turn will result in lower incidences of chemically-related injury and illness on the job. Further, the OSHA standard will reduce the costs involved with complying with diverse state and local standards.

OSHA originally proposed a chemical labelling standard Jan. 16, 1981. That proposal was withdrawn Feb. 12, 1981 and a new hazard communication proposal was subsequently published in the March 19, 1982 Federal Register. Hearings were held in June and July 1982 in Washington, Houston, Los Angeles and Detroit.

OSHA plans to develop various means of describing and explaining the provisions of the final standard to affected parties. The agency is considering a number of options to accomplish this, including sponsoring seminars as well as providing written materials. OSHA invites suggestions from interested parties regarding the most effective means to ensure the provisions are understood so that employers may comply with the requirements. Suggestions should be directed to Jennifer Silk, OSHA Health Standards, Room N-3700, Frances Perkins Bldg., Third St. and Constitution Ave., N.W., Washington, D.C. 20210, telephone (202) 523-7166.

Jurisdictions with their own safety and health plans must adopt a comparable standard by May 25, 1984. These jurisdictions include: Alaska, Ariz., Calif., Conn. (covers state and local government employees only), Hawaii, Ind., Iowa, Ky., Md., Mich., Minn., Nev., N.M., N.C., Ore., Puerto Rico, S.C., Tenn., Utah, Vt., Va., Virgin Islands, Wash., Wyo.



A brochure "Chemical Hazard Identification" which covers major provisions of the standard is available from OSHA. Interested persons should send a self-addressed mailing label to Hazard Communication, OSHA Publications, Room N-4101, Frances Perkins Bldg., Third St. and Constitution Ave., Washington, D.C. 20210.

OSHA's hazard communication standard is scheduled for publication in the November 25 Federal Register.

A fact sheet with highlights of the hazard communication standard is attached.  
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## HIGHLIGHTS OF OSHA'S HAZARD COMMUNICATION STANDARD

### Purpose

- To ensure the evaluation of chemicals to determine their hazards.
- To apprise workers in manufacturing industries of the hazards with which they work.
- To preempt state laws covering hazard communication in states without state OSHA plans; to require OSHA approval for state hazard communication laws in states operating their own OSHA programs.

### Scope

- Covers 14 million employees in 300,000 manufacturing establishments in SIC codes 20-39. These industries include: 20) Food and Kindred Products; 21) Tobacco Manufacturers; 22) Textile Mill Products; 23) Apparel and Other Textile Products; 24) Lumber and Wood Products; 25) Furniture and Fixtures; 26) Paper and Allied Products; 27) Printing and Publishing; 28) Chemicals and Allied Products; 29) Petroleum and Coal Products; 30) Rubber and Plastic Products; 31) Leather and Leather Products; 32) Stone, Clay and Glass Products; 33) Primary Metal Industries; 34) Fabricated Metal Products; 35) Machinery, Except Electrical; 36) Electrical Equipment and Supplies; 37) Transportation Equipment; 38) Instruments and Related Products; and 39) Miscellaneous Manufacturing Products.
- Requires chemical manufacturers and importers to assess hazards, develop labels and material safety data sheets and forward this information to manufacturers.
- Makes manufacturing employers responsible for informing and training workers about the hazards in their workplaces, retaining warning labels and making available material safety data sheets supplied with hazardous products.
- Exempts chemical laboratories in manufacturing from labeling provisions of standard, but otherwise provides for limited coverage of laboratory employees.
- Exempts hazardous wastes, wood, tobacco, "articles" and potentially hazardous substances such as drugs, food, and cosmetics brought into the workplace for the personal consumption of employees.
- Permits the use of labels required by other federal agencies in lieu of those otherwise required under this standard.

### Hazard Determination

- Written hazard evaluation procedures are required.
- Physical hazards include chemicals which are combustible liquids, compressed gases, explosive, flammable, organic peroxides, oxidizers, pyrophorics, unstable (reactive), or water-reactive.

-- Health hazards include 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. (See Appendix A of the standard.)

-- Determining health hazards (Appendix B)

- 1) If one or more positive studies--human and/or animal data--which are conducted according to accepted scientific principles and have statistically significant results which show adverse health effects that may occur as a result of employee exposure, these must be reported. Negative data believed to be relevant also may be reported.
- 2) The standard establishes a "floor" of about 600 substances automatically considered health hazards--substances regulated by OSHA and/or listed by the American Conference of Governmental Industrial Hygienists in Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment.
- 3) In determining carcinogenicity, chemical manufacturers/importers are to rely on the National Toxicology Program, the International Agency for Research on Cancer and OSHA standards.
- 4) Mixtures are to be evaluated for health hazards on the basis of data covering them or on the basis of data on any constituent chemical which comprises 1 percent or more of the mixture. If a constituent chemical comprises 0.1 percent or more and is a carcinogen, the mixture must be considered carcinogenic. If a mixture component represents less than 1 percent but might result in workplace exposures exceeding OSHA permissible exposure limits or in harm to workers, this must be reported.

#### Written Hazard Communication Program

- To be in writing and to be available to employees, designated representatives, OSHA and NIOSH.
- To cover container labeling, material safety data sheets and employee training.
- To include a list of hazardous chemicals in each work area, describe how the employer will meet criteria of the standard, explain methods for communicating hazards to employees involved in nonroutine tasks and to those who work in areas where there are unlabeled pipes, explain the methods used to inform contractors of hazards to which their employees may be exposed.

#### Labels

- Affixed by manufacturer, importer or distributor to shipped containers.

- Include identity (chemical and common names), hazard warnings and name and address of the manufacturer or responsible party. Must be legible, and in English. Must not be removed or defaced. May follow format required by other federal agency or foreign entity such as the European Economic Community. New labels not necessary if current ones provide required information.
- Not conflict with labels required by the Department of Transportation under the Hazardous Materials Transportation Act.
- Affixed by employer to other containers used in-plant by employees except: signs or placards or standard operating procedures, process sheets, batch tickets, blend tickets, etc. may be used for stationary containers.
- Exempt: pipes and piping systems as well as in-plant containers for immediate use only of employee who transfers chemicals from labeled containers.

#### Material Safety Data Sheets

- Manufacturers, importers and distributors to forward at the time of initial shipment to an employer.
- Employers required to obtain and maintain MSDS for each hazardous chemical in their workplace.
- Information must be in English, include identity and chemical and common names for the hazardous chemical. Mixtures to receive special treatment (see Hazard Determination above).
- One MSDS may be used for similar mixtures with essentially the same hazards and contents.
- MSDS must also include information specified on physical and chemical characteristics of the hazardous chemical; known acute and chronic health effects and related information; information on exposure limits and whether OSHA, the International Agency for Research on Cancer or the National Toxicology Program consider the chemical a carcinogen; precautionary measures; emergency and first aid procedures; date of preparation; and identification of the party responsible for the MSDS.
- No blank spaces permitted; spaces should be marked when information is not found or not applicable.
- New information to be incorporated on MSDS within three months following the manufacturer's receipt of the information. New MSDS to be transmitted with the next shipment of the chemical to the employer.
- Copies of MSDS or comparable written document to be available in the workplace to employees, designated employee representatives, OSHA and NIOSH.

### Employee Information and Training

- To take place upon initial assignment and when new hazards are introduced.
- To include: requirements of the standard; operations in the workplace where hazardous chemicals are used; location of written hazard communication program, material safety data sheets, written hazard evaluation procedures and lists of hazardous chemicals; procedures for determining the presence of a hazardous chemical; specific hazards of specific chemicals in employees' work area; protective measures employer has instituted and employees are to follow to protect themselves; how to read and interpret information on labels and material safety data sheets and how to get and use the available hazard information.

### Trade Secrets

- Manufacturer, importer or employer may withhold the specific chemical identity (chemical name, Chemical Abstracts Services registry number) from an MSDS if this information constitutes a trade secret; provided information on the hazardous nature of the chemical is disclosed on the MSDS and if the MSDS indicates that the specific chemical identity is being withheld because it is a trade secret.
- Trade secret information must be disclosed to OSHA upon request.
- Trade secret processes and percentage of mixture information are excluded from disclosure requirements.
- In emergencies the specific identity must be provided immediately upon request to a treating physician or nurse.
- Non-emergency situations
  - 1) The specific chemical identity must be made available to health professionals such as physicians, industrial hygienists, toxicologists and others providing medical or occupational health services to exposed employees upon written request.
  - 2) Written requests must describe the medical or occupational health need such as: to assess the hazards of chemicals to which employees will be exposed; to conduct or assess sampling of workplace atmosphere to determine employee exposure levels; to conduct pre-assignment or periodic medical surveillance of exposed employees; to provide medical treatment to exposed employees; to select or assess appropriate personal protective equipment for exposed employees; to design or assess engineering controls or other protective measures for exposed employees; to conduct studies to determine the health effects of exposure.
  - 3) The request must explain why the following types of information would be insufficient: properties and effects of the chemical; measures for controlling workers' exposure to the chemical; methods of monitoring and analyzing worker exposure to the chemical; methods of diagnosing and treating harmful exposures to the chemical.



-- Confidentiality

- 1) The request must describe procedures to be used to protect the confidentiality of the information and include a written agreement not to use the information for any purpose other than the health need or to release it except to OSHA and be signed by both the health professional and the employer or contractor of the health professional's services.
- 2) No penalty bond may be required; however, a liquidated damages agreement may be required and the parties may pursue non-contractual remedies to the extent permitted by law.
- 3) If the health professional decides to disclose the information to OSHA, he/she must inform the chemical manufacturer, importer or employer who provided the information.

-- Denials

- 1) Denials of health professionals' written requests for the specific identity of a chemical must be in writing within thirty days of the request and must include evidence to support the claim that the chemical identity is a trade secret, state the specific reasons for denial and explain in detail how alternative information may suffice.
- 2) If OSHA determines that the specific chemical identity does not represent a trade secret, the withholding manufacturer, importer or employer will be subject to citation. Likewise a citation may result if the specific chemical identity is a bona fide trade secret but the health professional has demonstrated a need to know the identity, executed a confidentiality agreement and shown adequate means for protecting the trade secret. Abatement of the citation will most likely involve divulging the information subject to confidentiality protections.
- 3) If the trade secret must be revealed, OSHA may impose additional limitations or conditions to assure that it is protected.

-- If the employer appeals the citation to the Occupational Safety and Health Review Commission, the administrative law judge may decide to review the matter in camera.

Effective Dates

-- November 25, 1985--Chemical manufacturers must complete labeling of containers shipped downstream and provide material safety data sheets to manufacturers.

-- May 27, 1986--All employers must be in compliance with all provisions of the standard.

# # #

FACT SHEET  
THE NEW FEDERAL HAZARD COMMUNICATION STANDARD

The Occupational Safety and Health Administration (OSHA) has just released its long awaited hazard communication standard (29 CFR §1910.1200) for certain private sector employees. However, this federal standard is no substitute for a comprehensive state right to know law such as the one proposed in H.B. No. 1236. Moreover, very little, if any, of the proposed state law would be pre-empted by the federal standard.

I. THE OSHA STANDARD PROVIDES ONLY  
LIMITED PROTECTION FOR A NARROW GROUP  
OF EMPLOYEES.

It is important to recognize the extremely limited scope of the new OSHA standard. First, it applies only to employers in the manufacturing section, SIC codes 20-39. It does not cover public employees, or employees in agriculture, mining, construction, transportation, wholesale trade, retail, health, education, or other service establishments. Many employees in these sectors work with hazardous substances and need protection.

The OSHA standard leaves it entirely to each chemical manufacturer to decide what chemicals are hazardous. The only minimum list is the OSHA "Z" list plus certain carcinogens, probably about 700 chemicals in all. Moreover, the OSHA standard requires labeling only of containers of company designated hazards, and does not require use of the true chemical name. The chemical companies are given almost complete discretion as to what information may be withheld as a trade secret, save only for narrow exceptions concerning medical emergencies and studies.

Finally, the OSHA standard contains no provision for public or community access to any information. This is crucial, since many workplace hazards present serious dangers to the communities around them, and the public often has even less idea than employees as to the identity of the chemicals present in a plant.

The proposed Pennsylvania Right to Know legislation contains stronger and more effective provisions for the labeling of all workplace containers, coverage of all workplaces, the tracking of designated hazardous substances, more effective means of enforcement, and availability of all information, including the true chemical name of the substance, to both workers and the public. The proposed state law does not duplicate the OSHA standard, but provides far broader and more effective coverage than OSHA.

## II. THE OSHA STANDARD DOES NOT PRE-EMPT STATE LAW IN THIS AREA.

Many Pennsylvania companies are arguing that the new OSHA standard will pre-empt any state right to know law. Pre-emption means that a federal law or regulation takes precedence over any state or local law concerning the same subject matter and renders the state or local law void. However, a review of applicable law shows that little, if any, of the proposed Pennsylvania law would be pre-empted by the OSHA standard.

In determining whether or not a federal provision pre-empts a state law, the courts generally look to the Congressional intent as expressed in the statute. Section 18 of the Occupational Safety and Health Act, 29 U.S.C. §667 clearly indicates that any health and safety issue not clearly regulated by OSHA may be regulated by state law. The Courts have interpreted this as a "weak" form of pre-emption, allowing states considerable leeway in supplementing federal regulation of employee health and safety. OSHA cannot simply announce that the field of hazard communication is pre-empted. There must be a legal finding of such pre-emption by carefully comparing the provisions of the federal and state laws in light of their respective purposes, and determining whether the laws conflict.

The federal standard states that it is intended only "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." Thus, by its own terms, the federal standard is not addressed to - and therefore could not be intended to pre-empt - the rights and needs of nonmanufacturing employees or the availability of information to the public. The federal standard concerns hazard communication to manufacturing employees, whereas the state law is premised on chemical identification for all employees and the public at large. These are different purposes, and so long as the state law does not directly conflict with the federal act or unduly burden interstate commerce, there should not be pre-emption.

Even on the issue of labeling, where an argument for pre-emption might be strongest, there is good reason to believe that the state law would not be pre-empted. To the extent that state law requires chemical name labeling to benefit downstream users - both nonmanufacturing employees and members of the public - then the state requirement addresses entirely different concerns than those of the OSHA standard. Under these circumstances, there should not be pre-emption, except as to the federal requirements for containers used in manufacturing.

Moreover, the federal OSHA statute provides for the adoption of state plans to regulate a particular health and safety issue or area, so long as that regulation is comprehensive and

provides protection at least as strict as that required by federal law, 29 U.S.C. §667. Once Pennsylvania passed H.B. 1236, it could petition OSHA to recognize its plan in this area. OSHA is even empowered to provide a grant to aid in the financing of the plan's enforcement, 29 U.S.C. §672(g).

In predicting how the state law and federal standard would co-exist, it is important to remember that the actual determination of this issue will in all probability be made by the courts after a great deal of litigation. The AFL-CIO has already petitioned the U.S. Court of Appeals to review the federal regulation, and there will undoubtedly be litigation in those states that already have strong right to know laws. Such court proceedings could take years. Pennsylvanians should not allow speculation about what the courts will do years in the future now to prevent the passage of a law that workers and the community need now. The new federal standard is inadequate; it does not and should not prevent the Pennsylvania legislature from passing H.B. 1236.

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Dated: November 29, 1983

# American Federation of Labor and Congress of Industrial Organizations

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February 21, 1984

## MEMORANDUM

TO: Persons Interested in OSHA's Hazard Communication Standard and the Right-to-Know

FROM: Peg Seminario, Associate Director  
Department of Occupational Safety, Health and Social Security

RE: AFL-CIO Summary and Analysis of OSHA's Hazard Communication Standard

Enclosed for your information is a copy of a Summary and Analysis of OSHA's Hazard Communication Standard.

Since the standard was issued in November, 1983, we have received hundreds of requests for information on the OSHA standard, state right-to-know activity, and preemption of state laws by the OSHA standard. This analysis was written to respond to the many different kinds of questions we have been receiving. It reviews the background and history of the standard, summarizes the standard's provisions, and sets forth the issues related to preemptions.

Since the standard was issued in November, OSHA and the industry have been attempting to use the existence of the federal standard to discourage states from adopting right-to-know laws. Assistant Secretary Thorne Auchter has even gone so far as to testify before the Pennsylvania state legislature against the Pennsylvania right-to-know bill, and has essentially told the industry that they shouldn't bother complying with state laws.

From all indications, federal OSHA's activity has not discouraged state right-to-know efforts. Legislation is under consideration in over a dozen states including Pennsylvania, Maryland, Florida, Iowa and Missouri.

The AFL-CIO continues to support state and local right-to-know legislation, since the federal OSHA standard is inadequate to protect workers. We urge states to continue their efforts to adopt the strongest workplace and community laws possible. If you have questions regarding provisions of right-to-know legislation that are not answered by the enclosed analysis, please feel free to contact this office for assistance (202-637-5366).

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## AFL-CIO SUMMARY AND ANALYSIS OF OSHA'S HAZARD COMMUNICATION STANDARD

On November 25, 1983 the Occupational Safety and Health Administration issued its final Hazard Communication Standard. OSHA claims the standard is the most far reaching and protective health standard ever issued by the agency and will provide workers with necessary chemical hazard information. The AFL-CIO does not believe that the standard provides the protections claimed by OSHA, and that the standard was issued as an attempt to preempt state and local right-to-know laws, not to protect workers.

The standard limits coverage to the manufacturing sector (SIC codes 20-39). No protections are provided for construction, service industries, transportation or other industries outside SIC codes 20-39. Manufacturers and employers can claim any chemical they choose a trade secret and withhold the chemical identity from the exposed workers. Despite the limitations in coverage and protection, OSHA has announced it's intent to preempt state right-to-know laws, even those laws which go beyond the federal standard in providing protection.

The labor movement has gone to court to challenge the standard, in order to force OSHA to issue a standard that really will provide workers the "right-to-know" the identities and hazards of workplace chemicals and to prevent OSHA from preempting state laws which provide greater protection and are consistent with the OSHAct.

### BACKGROUND AND HISTORY

The labor movement has been fighting for a strong federal OSHA right-to-know standard for more than a decade. The unions want protections that will provide workers and union representatives a right-to-know the specific chemical names of workplace chemicals and the hazards of these chemicals.

In 1980, under the Carter Administration, OSHA issued a regulation which was part of the "right-to-know" package. OSHA's Access to Employee Medical and Exposure Records rule required that employers maintain medical and exposure records of workers exposed to toxic chemicals and make the records available to exposed workers and their representatives for examination and copying. This rule only required the maintenance of existing records on chemicals, not the generation of new records.

In January 1981, the Carter Administration published its proposed right-to-know/hazards identification proposal in the Federal Register. The proposal required all containers of chemicals to be labeled with the real chemical names of all toxic chemical ingredients and the hazards posed by those chemicals. Claims of trade secrets for these toxic chemicals were not allowed. Within days of taking office the Reagan Administration withdrew the OSHA proposal at the request of the chemical industry intending that this action would kill the right-to-know movement.

On the contrary, the Reagan Administration's action pulling the right-to-know proposal intensified the right-to-know movement. Unable to secure protections at the federal level, the labor movement joining with its allies

in the environmental and consumer movements turned to the states and local governments for right-to-know protections. As a result of this concerted activity, in the last four years right-to-know statutes have been introduced in at least 30 states and over three dozen communities.

Fourteen states now have right-to-know laws on the books. The laws differ in their scope, coverage and requirements. Some cover only the workplace, others extend protections to the community as well. Some cover limited numbers of chemicals, for others the coverage is very broad.

Faced with the prospect of 50 different state laws, the chemical industry turned to the Reagan Administration for a federal OSHA standard which the industry hoped would legally or politically preempt state and local right-to-know laws. The Reagan Administration proposed a very weak federal OSHA Hazard Communication Standard in March 1982. After months of public hearings around the country and 1 1/2 years of deliberation, federal OSHA issued its final Hazard Communication standard in November 1983. Some parts of the final standard such as health hazard definitions are better than the 1982 proposal, but other parts, such as the trade secret provisions are worse. A summary and analysis of the November 25, 1983 OSHA final standard on Hazard Communication is outlined below.

## GENERAL

The OSHA Hazard Communication Standard covers employers in the manufacturing sector (SIC codes 20-39). Chemical manufacturers (and importers) have the primary obligation to evaluate chemicals for their hazards, develop and transmit material safety data sheets and labels. User employers have an obligation to develop a hazard communication program which includes material safety data sheets, labels, lists and training.

The material safety data sheet is the primary vehicle for transmitting information; there is no requirement to label containers with the chemical names of hazardous components. The trade secret provisions of the standard are very broad. Chemical manufacturers/employers can claim any chemical they choose a trade secret and withhold the identity from the exposed workers. Access to trade secret identities is only provided to health professionals and even then only under very limited circumstances and conditions.

## SCOPE

### Industries Covered

The standard's coverage is limited only to the manufacturing sector, SIC codes 20-39. Included in these SIC codes are the basic manufacturing industries such as chemical, electrical, rubber, steel, auto, textile, etc.

- All industries which fall outside SIC codes 20-39 such as agriculture, maritime, construction, transportation, communications, utilities, services, etc. are excluded from the standard's coverage even though millions of workers in these industries are exposed to toxic

chemicals. The only requirement that will provide some indirect coverage to those excluded industries is the standard's requirement that all chemical manufacturers must label chemical containers before shipment from the manufacturing facility. The only information that must appear on these labels is any form of chemical identity (including trade names), appropriate hazard warning as determined by the manufacturer, and the name and the address of the chemical manufacturer. There is no requirement that material safety data sheets be shipped to users outside SIC codes 20-39, nor is there even a requirement that excluded industry employers leave labels intact.

- Laboratories in the manufacturing sector (SIC codes 20-39) are not subject to the standard's full requirements. For laboratories in covered industries employers are required to leave labels intact, maintain and make available copies of material safety data sheets, and apprise laboratory workers of chemical hazards.

It is the AFL-CIO's position that all workers exposed to toxic chemicals in all industries should be covered by the standard. Exposure to toxic chemicals not an arbitrary SIC code determination should be the basis for coverage under the standard.

#### Chemicals Covered

Chemical manufacturers and importers of chemicals are required to evaluate all chemicals they produce or import (including mixtures) to determine if the chemicals are hazardous as defined by the standard. Only those chemicals the manufacturer or importer determines to be hazardous are subject to the standards labeling, safety data sheet, listing and training provisions.

- Chemicals listed in 29 CFR 1910.1000 Subpart Z and the ACGIH Threshold Limit Values list are defined as hazardous by the standard and are subject to the standard's provisions.

- Chemicals which are regulated OSHA carcinogens or listed as potential carcinogens in the latest National Toxicology Program Annual Report on Carcinogens or in the International Agency for Research on Cancer Monographs are defined as carcinogens for the purpose of the standard and are subject to the standard's provisions.

- Other chemicals which pose physical hazards or health hazards as defined in the standard are also covered. For health hazards, chemicals for which animal or human evidence demonstrates an adverse health effect are covered. But there is some ambiguity as to which effects reported in animal studies trigger coverage of a chemical. OSHA's interpretation of this provision of the standard will determine whether the standard's coverage is very broad covering most chemicals for which well conducted animal tests show positive results, or limited primarily to OSHA and ACGIH listed chemicals (about 600 chemicals).

- Pure chemicals and chemical mixtures are covered by the standard. For mixtures which have been tested as a whole, the results of the testing may be used to make a hazard determination. For mixtures which have not been tested as a whole, the mixture is presumed to present the same health hazard as do hazardous components which comprise 1.0% or greater of the mixture, or 0.1% or greater concentrations for carcinogens.

- Chemicals, foods, drugs, cosmetics, consumer products and hazardous wastes subject to the labeling provisions of other federal statutes (such as the pesticide law or Consumer Product Safety Act) are exempted from the labeling provisions of the OSHA standard when labeled according to these other statutes.

### Hazard Determination Procedures

- Chemical manufacturers and importers are required to evaluate the chemicals which they produce or import to determine if they are hazardous. Other employers covered by the standard may rely upon the hazard determinations performed by the manufacturer or importer.

- Chemical manufacturers, importers or employers who evaluate chemicals are required to identify and consider the scientific evidence concerning the physical hazards and health hazards of such chemicals.

- Specific definitions of physical hazards covered by the standard are set forth in the definition section of the standard (i.e. definitions of combustible liquid, compressed gas, explosive etc.).

- 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 meet the definitions of health hazards set forth in Appendix A.

- Appendix A which is mandatory sets forth the health effects covered by the standard. Appendix A includes definitions of what constitutes a carcinogen, corrosive agent, highly toxic and toxic substance, irritant, and sensitizer and lists target organ effects to illustrate the kinds of additional effects that are covered by the standard. This section is an improvement over the March 1982 OSHA proposal which contained no mandatory definitions for coverage of health hazards under the standard.

- Appendix B, which is also mandatory, sets forth the hazard determination procedures which must be utilized in evaluating chemicals. The hazard determination requirement is performance oriented; no mandatory sources of information are listed for consultation. Certain criteria which must be followed in all hazard determinations are included:

1) Determinations made by NTP, IARC or OSHA that a chemical is a carcinogen or potential carcinogen are considered conclusive evidence to establish carcinogenicity.

2) Epidemiological studies and case reports of adverse health effects must be considered in the evaluation.

3) The results of animal testing must be used to predict the health effects that may be experienced by exposed workers.

4) 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 are considered sufficient basis for a hazard determination and must be reported on the safety data sheet. For acute health hazards, the definitions of what constitutes an adverse health effect in animal studies are set forth in Appendix A. For chronic health effects, the manufacturer appears to have considerable flexibility in determining which results of animal tests constitute an adverse health effect and trigger coverage under the standard. Manufacturers and importers are also permitted to report the results of other scientifically valid studies which tend to refute the findings of the hazard.

- Appendix C which is nonmandatory sets forth a list of information sources that may be consulted in making a hazard determination.

- Chemical manufacturers, importers or employers evaluating chemicals are required to describe in writing their hazard determination procedures and must make these written procedures available upon request to employees, employee representatives, OSHA and NIOSH.

#### Hazard Communication Program

- Each employer in SIC codes 20-39 is required to develop and implement a written hazard communication program for their workplaces which sets forth how requirements for labeling, warnings, material safety data sheets and training will be met. The written program shall be available to employees, employee representatives, OSHA and NIOSH upon request.

- Lists of hazardous chemicals known to be present in the workplace must be compiled. Chemicals may be listed by any identity including trade names or code names, that is referenced on the material safety data sheet, and lists may be compiled by workplace or work area. The list is for chemicals currently present; there is no requirement to maintain lists of chemicals for any period of time.

- The hazard communication program must set forth the methods the employer will use to inform employees of non-routine tasks and the hazards associated with chemicals contained in unlabeled pipes in their work areas. The AFL-CIO recommended labeling or placarding of pipes and valves with appropriate identity and hazard information.

- Employers are required to develop methods to inform any contractor working in the facility of the hazardous chemicals present and of appropriate protective measures.



- Employers may rely on existing hazard communication programs which meet the criteria set forth in the standard.

## **LABELS AND PLACARDS**

The standard places minimal importance on labels and relies primarily on material safety data sheets to convey most identity, hazard and control information.

- Chemical manufacturers, importers and distributors must ensure that each container of hazardous chemicals leaving the workplace is labeled with: 1) the identity of the hazardous chemicals(s) (this may be either a chemical name, common name, trade name or code name); 2) appropriate hazard warnings (determined by the manufacturer); and 3) the name and address of the chemical manufacturer or importer.

- For chemicals regulated by specific OSHA health standards, labels must meet the requirements of the health standard.

- Employers in SIC codes 20-39 must ensure that each container of hazardous chemicals in the workplace is labeled with the: 1) identity of the hazardous chemical (chemical, common, trade or code name); and 2) appropriate hazard warnings.

- Placards, signs, process sheets, operating procedures, etc. may be used in place of labels for stationary process containers.

- Portable containers into which chemicals are transferred from labeled containers, and which are intended for the immediate use of the employee who performs the transfer, need not be labeled.

- Employers in SIC codes 20-39 are prohibited from removing or defacing labels unless the container is immediately marked with the required information.

## **MATERIAL SAFETY DATA SHEETS**

- Under the OSHA standard, material safety data sheets (MSDS) are the primary vehicle for transmitting chemical identity and hazard information.

- Chemical manufacturers and importers are required to develop or obtain a MSDS for each hazardous chemical they produce or import. Manufacturing employers are required to have a MSDS for each hazardous chemical which they use, and may rely on MSDS supplied by the chemical manufacturer.

- Material safety data sheets must contain the following information: 1) the identity used on the label; 2) the chemical and common name of the substance; 3) for mixtures which have been tested, the chemical and common names which contribute to the known hazards and the common name of the mixture itself; 4) for untested mixtures, the chemical and common names of all ingredients which have been determined to be health hazards which

comprise 1.0% or greater of the composition, or 0.1% or greater for carcinogens; 5) the chemical and common names of all ingredients which present a physical hazard when present in the mixture; 6) physical and chemical characteristics; 7) physical hazards; 8) health hazards of the hazardous chemical, including signs and symptoms of exposure; 9) primary routes of entry; 10) the OSHA permissible exposure limit, ACGIH TLV or any other exposure limit recommended by the chemical manufacturer; 11) carcinogenicity determinations made by NTP, IARC or by OSHA; 12) precautions for safe use and handling; 13) generally applicable control measures known to the chemical manufacturer; 14) emergency and first aid procedures; 15) the date of preparation of the MSDS, and 16) the name, address and telephone number of the chemical manufacturer or other party responsible for the preparation of the MSDS.

- Where a hazard determination reveals no relevant information for any given category, the MSDS must indicate that no applicable information was found.

- For complex mixtures which 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 may prepare one MSDS for all similar mixtures.

- Chemical manufacturers must ensure that the information on the MSDS accurately reflects the scientific evidence used in making the hazard determination.

- Chemical manufacturers must add new significant information on chemical hazards or protection against hazards to the MSDS within three months.

- Chemical manufacturers or importers must provide distributors and manufacturing employers with an MSDS with the first shipment of the chemical and with the first shipment after an MSDS is updated. If the MSDS is not provided with the initial shipment, manufacturing employers are required to obtain one from the chemical manufacturer, importer or distributor as soon as possible.

- Copies of material safety data sheets must be maintained in the workplace and must be readily accessible to employees during each work shift.

- Material safety data sheets must be made available upon request to designated representatives, OSHA and NIOSH in accordance with provisions of OSHA's Access to Medical Records Standard.

#### **WORKER TRAINING AND INFORMATION**

- Employers must provide workers with information and training on hazardous chemicals in their work area upon initial assignment and whenever new hazards are introduced into the work area. Annual or other routine training is not required.

- Workers must be informed of the requirements of the standard, operations where hazardous chemicals are present, and the location and availability of the written hazard communication program, lists of chemicals and material safety data sheets.

- Worker training programs must include: 1) methods and observations that may be used to detect hazardous chemicals; 2) the hazards of chemicals in the workplace; 3) measures employees can take to protect themselves including control procedures the employer has implemented; and 4) details of the hazard communication program developed by the employer.

#### TRADE SECRETS

- The trade secret provisions of the standard are a study in contrast: they provide very broad protections for trade secrets but only limited protections for worker health. Manufacturers and employers can claim any chemical they choose a trade secret, regardless of the chemical's hazards, and withhold the specific chemical identity from the data sheet and workers if certain other requirements set forth in the standard are met. The trade secret protections for manufacturers and employers are so broad they create a loophole that threatens to swallow the rest of the standard.

- Chemical manufacturers and employers must be able to "support" all trade secret claims. The standard does not define what constitutes adequate support nor does it require written substantiation. The preamble indicates that "support" would only be required after the fact if the trade secret claim were challenged. Thus, there is no barrier to prevent overly broad trade secret claims in the first place.

- For chemicals alleged to be trade secrets, general information on the properties and effects of the chemicals must be disclosed, and the MSDS must indicate specific chemical identity is being withheld on trade secret grounds.

- Workers and union representatives have no right of access to specific chemical identities claimed as trade secrets. Limited access is provided only to health care professionals. The Hazard Communication standard appears to be in direct conflict with the OSHA Access to Medical and Exposure Record rule which provides for workers and union access to specific chemical identities claimed trade secret by the employer, if the worker or union signs a confidentiality agreement.

- Under the standard health care professionals have limited access to trade secret chemical identities in emergency and non-emergency situations. In emergency situations treating physicians or nurses may request and obtain trade secret identities needed for diagnosis or treatment. The manufacturer must provide the information but may require a written statement of need and confidentiality agreement after the fact.

- The procedures of non-emergency access to trade secret identities are complicated, burdensome and unworkable. Access is limited to health professionals including physicians, industrial hygienists, toxicologists or epidemiologists. Health professionals must request the trade secret information in writing, and state in reasonable detail why the information is needed for one of the occupational health purposes set forth in the standard (i.e. to conduct monitoring, medical surveillance, epidemiological studies, etc.). The request must detail why the specific chemical identity is needed and why other specific types of information are inadequate.

- The health professional (and his/her employer or contractor) must sign a written confidentiality agreement stating the information won't be used for other purposes and agree not to release the information to anyone, including the exposed or affected worker, unless such release is authorized in the agreement.

- For these confidentiality agreements, manufacturers/employers may restrict the use of the information to the specified health purposes, and may require specific legal remedies if the information is disclosed, including the manufacturers/employers estimate of the damages.

- Health care professionals who decide the trade secret information should be disclosed to OSHA, must inform the chemical manufacturer/employer of this action.

- Chemical manufacturers and employers may deny requests for trade secret identities. The manufacturer/employer must respond in writing to the health professional within 30 days of the request. The denial must state why the request is being denied and why other alternative information may satisfy the occupational health needs.

- The standard establishes OSHA as the initial arbitrator for cases where specific chemical identity is denied. OSHA is required to determine whether the manufacturer has supported the trade secret claim ("support" is not defined), and whether the health professional has supported the need for the trade secret information and demonstrated that the information will be protected.

- OSHA is supposed to determine whether the trade secret is legitimate and whether the health professional has a legitimate health reason for the information. Citations against the manufacturer/employer are to be issued for non-compliance. However, the manufacturer/employer may still contest the citation and withhold the information until the case is decided by the Occupational Safety and Health Review Commission. This procedure invites denials of trade secret requests, contest of OSHA findings and will result in years of delay.

- There are no provisions in the standard for workers or union representatives to challenge overly broad trade secret claims or to request chemical identities claimed trade secret. All workers and union representatives must work through a health professional. Few local unions

have access to a health professional they trust. How many health professionals would be likely or willing to subject themselves to the hassles and constraints involved with gaining trade secret information? The practical effect of the standard's trade secret provisions will be that manufacturers/employers can claim anything they choose a trade secret and withhold chemical identity for workers and their representatives.

#### **EFFECTIVE DATES**

- None of the standard's provisions go into effect for at least two years.

- By November 25, 1985 all chemical manufacturers and importers are required to label containers and provide MSDS's with first shipment.

- By May 25, 1986 all covered employers are required to comply with all the standards provisions including training and education.

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#### **PREEMPTION**

The OSHA standard states that the "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." According to the standard "any state which desires to assume responsibility in this area may only do so under the provisions of Subsection 18 of the Occupational Safety and Health Act which deals with state jurisdiction and state plans."

Reading this regulatory language together with the accompanying preamble, there is uncertainty about the extent to which OSHA intends the standard to preempt state laws. To further complicate matters, since the standard was issued Assistant Secretary Auchter has made public statements about preemption which go beyond the rationale and statements contained in the standard.

The upshot on the preemption issue is that there are serious disagreements between the AFL-CIO and OSHA concerning a variety of issues resulting from OSHA "preemption" strategy. The key issues are as follows:

1. To begin with, the federal rule does not become effective for two years after promulgation, i.e. November 1985. Yet OSHA appears to be ready to support any employer who argues that even during this interim period — when no federally enforceable obligations are in place — states are prohibited from enforcing their right-to-know laws.

2. Commencing in November 1985, OSHA apparently intends that in all states without approved state OSHA plans existing right-to-know laws will be preempted "in all occupational settings," not just the manufacturing sector. It is OSHA's position that these states will no longer be entitled to enforce their own right-to-know laws even in sectors not covered by the federal regulation (e.g. construction, transportation, utilities, services).



3. According to OSHA, only states with approved state OSHA plans may adopt right-to-know standards or statutes. However, this does not automatically mean that these states will be permitted to enforce standards or laws that are more effective from a worker protection standpoint than the federal regulation. Instead, the states will be required to submit these provisions to OSHA for approval. OSHA has stated that it will approve a state standard different from the federal regulation only if it is "required by compelling local conditions and does not unduly burden interstate commerce."

As you know, the AFL-CIO has launched a major court challenge to various aspects of the federal standard either because they are "arbitrary" or because they are not justified by customary preemption concepts. These matters will be addressed in detail in the AFL-CIO's brief to the United States Court of Appeals for the Third Circuit and ultimately will be decided in court.

In the meantime, while we are pursuing our legal remedies in court, the AFL-CIO urges our affiliates to continue their efforts to seek strong state and local right-to-know protections. It is clear that the federal OSHA standard does not provide adequate protection and that state and local right-to-know laws are still needed. We urge states to seek the broadest protections possible including provisions for community right-to-know and special provisions for firefighters and public safety. Where there is pressure from the industry or state to adopt the federal OSHA standard as a law or regulation every effort should be made to improve it, especially in areas of coverage and trade secrets, so that meaningful chemical and hazard information will be provided to all exposed workers.

In enacting right-to-know laws, states should include appropriate "severability" language to insure that the state laws remain in full force and effect except to the limited extent that any final court decision determines that a portion of that law is preempted by the federal standard.

# The New OSHA Rules and the Worker's Right to Know

by THOMAS O. MCGARITY

**T**he industrial workplace can be a very dangerous place to earn a living. In addition to machinery that may be harmful, many workplaces contain potentially hazardous chemicals and other materials that are not immediately disabling, but cause industrial diseases, such as asbestosis, brown lung, and leukemia, which occur only after a long period of chronic exposure.<sup>1</sup> Despite the relatively recent enactment of the Toxic Substances Control Act,<sup>2</sup> with its unimplemented requirement that certain new substances be tested before they are marketed on a large-scale basis, workers are usually the first to experience the toxic effects of newly created substances.

During the last decade, an important political debate has focused on workers' "right to know" what chemicals they are being exposed to and what the effects of those substances on human beings might be. However, employers resist disclosing this information, primarily because it might jeopardize their interest in maintaining trade secrets.

## The Nature of the Worker's Right to Know

The "hazard communication" standard, issued by the Occupational Safety and Health Administration (OSHA)<sup>3</sup> on November 25, 1983, is a series of rules that has set new requirements for employers. The rules grant employees, their unions, or OSHA access to medical and exposure records that are kept by an employer. They require manufacturers to label and to post a "Material Safety Data Sheet" (MSDS) for each hazardous chemical; and they place on the employer the duty to disclose information regarding the use of specific hazardous substances. Existing state laws also provide access and disclosure rules, as well as enforcement procedures and trade secret protection. Although these laws vary from state to state, many are more stringent and protective of the workers' "right to know" than are the OSHA rules. Thus it is a matter of concern that federal preemption of state laws is now a possibility.

Although the OSHA rules may prove useful to workers and their unions seeking chemical identification and com-

pensation claims, their effectiveness depends upon the initiative of workers, voluntary record keeping by employers, and the limitations imposed by trade secret restrictions. What are the ethical principles undergirding the rules, and what guidance do they offer in grappling with the obligations and rights of employers and employees?

Modern ethical thinking has almost universally concluded that a patient has a right to make an informed consent to a doctor's therapeutic recommendation. Moreover, when society as a whole can benefit from a person's voluntary assumption of a risk as in the case of human experimentation, the ethical mandate that the subject's consent be informed is especially stringent.<sup>4</sup> Although the ethical principles underlying informed consent would seem to translate readily into the context of the workplace, employers do not always acknowledge the "right" of workers to be informed about the substances to which they are exposed. The "worker's right to know" is at approximately the same stage of development as was informed consent in the 1960s.

Employers often maintain that their reluctance to inform employees about toxic workplace risks springs from the same considerations that motivated doctors—a paternalistic concern for the well-being of individuals and a corresponding belief that they lack the education or training to put the information to good use. This solicitude is even more suspect in the workplace than in the doctor's office, because the employer derives a direct financial benefit from the worker's ignorance. Informed workers may demand higher wages (risk premiums) or safer working conditions. It is unlikely that employers will concede that extracting risk premiums constitutes a "good use" for health and safety information. Were paternalism the only ethical consideration justifying the employers' stance, the ethical analysis of the issue would be straightforward—the worker should have a right to know. The issue, however, is complicated by three considerations that do not relate directly to the doctor-patient question.

First, the right of employees to know is an agglomeration of rights that requires increasingly burdensome responses from employers or from society in general. Indeed, it may be more accurate to define the right to know by reference to the four categories of correlative duties that it imposes on employers: (1) the duty to *reveal* information already possessed; (2) the duty to *communicate* information about hazards through labeling, written communications, and training programs; (3) the duty to *seek out* existing information from the scientific literature and other sources; (4) the

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duty to *produce* new information (for example, through animal testing) relevant to employee health. General assertions of broad workers' right to know often do not distinguish among these four separate duties. The doctor-patient relationship gives rise to, at most, the first three duties, but proponents of a worker's right to know would impose the third and fourth duties on employers, thus obliging the corporation to do something that it would not otherwise do, solely for the benefit of its employees.

A second distinction between the workers' right to know and informed consent is the nature of the relationship between the information user and the information provider. The doctor-patient relationship is a joint enterprise whose acknowledged goal is the welfare of the patient. The employer-employee relationship is more adversarial. The more employees know about workplace hazards, the less happy they are likely to be about their jobs. An employee may demand more money or may quit, in which case the employer may have to replace the worker at a higher wage. Similarly, informed employees who later become ill may use their knowledge about workplace risks to support workers' compensation claims. The employer, therefore, has a direct financial incentive not to communicate workplace hazard information to employees.

To be sure, an employer has an interest in the health and well-being of employees. A great deal of money may be spent on employee training and education, which will be wasted if employees become diseased or are injured. In the no-fault workers' compensation scheme that is currently in effect in most states, only by keeping the workers healthy can the employer avoid paying benefits. This gives the employer some incentive to communicate information about hazards to workers, but it applies almost exclusively to acute safety hazards that are easily avoided by well-informed workers. Since there is not much an employee can do to reduce chronic health hazards (short of wearing uncomfortable and often ineffective respirators), the employer has little incentive to communicate information about chronic and latent disease hazards.

All of the duties associated with the right to know are thus affirmative obligations that require employers to expend resources without much corresponding gain. Making existing information available to employees requires only the cost of maintaining and updating files. But affirmative communication of hazards to workers requires that pipes, vessels, walls, barrels, and other containers be clearly labeled. According to some versions of the right to know, the employer is further obliged to conduct training programs to ensure that employees are informed of chronic risks and how best to reduce them. If the substances in the workplace change frequently, the employer must endure the increased cost of changing the labels and additional training. Imposing the still more burdensome requirement of searching out existing literature for evidence of potential hazards requires employers to absorb the cost of making the literature accessible and

providing a technically proficient staff. Finally, an employer can easily spend millions of dollars testing substances for toxicity,<sup>5</sup> if that duty is also imposed.

A third distinction between the doctor-patient and the employer-employee relationships is the larger stake that society may have in the confidentiality of "trade secret" information. An employer's reluctance to convey information to employees may stem from fear that disloyal employees will reveal confidential information to competitors, who can thereby avoid the research and development costs of a new manufacturing process.

Suppose, for example, that the secret ingredient in Polaroid film may be hazardous to workers. It would be difficult for an employee (or a union) to obtain an independent assessment of the risks posed by the chemical, unless the employee (or the union) was aware of the chemical's identity. Polaroid, on the other hand, would be reluctant to reveal the identity of that chemical to its workers for fear an employee would, in turn, convey that information to Kodak. To the extent that Polaroid could not protect its trade secrets, it could lose its incentive to innovate and develop new products and processes. The long-range consequence might be a reduction in the flow of new American products and a corresponding loss of competitive advantage to other countries that protect trade secrets more effectively. Society, therefore, has a strong interest in the clash between trade secrecy and the right to know within the employer-employee relationship. We all gain from the new products that result from the incentive to innovate—only the hypothetical Polaroid workers lose.

Because of the adversarial nature of the employer-employee relationship, it is probably best to set the rights-oriented model aside and begin to search for a new model to guide decisions in this area. As important social interests permeate both sides of the adversarial relationship, the balancing paradigm may be more appropriate.

### Competing Moral and Practical Considerations

**Autonomy.** Our society highly values individual autonomy. Yet free choices require information. When those who have information about risks convey it to those who are subject to those risks, autonomy is enhanced and society is the better for it. Considerations of autonomy would therefore seem to support a general moral duty on everyone with knowledge of risks to convey that knowledge to persons who are exposed to those risks.

Yet this process is rarely cost-free. To the extent that a duty to convey risks would require a person to do something that he would not otherwise do, its imposition restricts that person's autonomy. Hence, the law, for example, does not impose a general duty on an individual to warn another of his or her peril.<sup>6</sup>

Requiring an employer to warn employees of workplace hazards can impinge heavily on the employer's autonomy.

Merely requiring the corporation to open up its health and safety files to employees and their representatives, although not imposing large direct costs, can risk the unlawful appropriation of valuable trade secrets. Trade secrets have been called "property" by some courts and commentators.<sup>7</sup> Causing an employer to risk sacrificing a valuable property interest could be a significant intrusion on corporate autonomy. Imposing any of the other three aforementioned duties add increasingly burdensome direct financial outlays on employers. Clearly, a government requirement that one person expend resources for the benefit of another reduces that person's autonomy.

Autonomy considerations alone are not especially helpful in resolving the clash of interests. An attractive solution might be a bargain between the employer and employee, where each party voluntarily sacrifices some autonomy in order to gain some autonomy. Because acquiring information costs money, employees desiring information about workplace risks should be willing to pay the employer (in reduced wages) or someone else to produce or gather the relevant information. A straightforward economic analysis would suggest that employees would be willing to pay for health and safety information up to the point at which the value in wage negotiations of the last piece of information purchased equaled the cost of that additional information.

While the bargaining approach seems appropriate in theory, it suffers considerably in practice, for employees cannot know in advance what the value of information will be in wage negotiations. For example, an expensive study that concludes that a particular workplace is relatively safe will have no value to employees in wage negotiations. A second practical drawback is the familiar "transaction cost" and "free rider" problems that plague any economic analysis of collective action.<sup>8</sup> It costs money to bring employees together to decide how much money to spend on information, and a free rider can have the benefits of the collective action without contributing to its costs, thus reducing the incentive of every individual to participate in the collective action. Finally, since the employer is likely to be the source of most information on workplace risks, there can be no real market in workplace risk information. The employer is a monopolist and will not part with this information without charging something in excess of what the employees are willing to pay; that is, the amount they hope to gain in wage negotiations by using the information.

The bargaining model has failed in practice; most information on chronic risks is now conveyed to workers not voluntarily by employers but by virtue of governmental requirements. Yet it is virtually impossible for an external agency to measure in an unbiased way a reduction in one person's autonomy against a different sort of reduction in the autonomy of a corporation. Unless one is willing to afford corporate entities no autonomy interests at all, the comparison is probably futile. Unfortunately, not only is this subjective comparison necessary to a thorough analysis

of the issue, but the net autonomy balance must also be weighed against other incommensurable values.

*Fairness.* Just as our society values autonomy, it also values fairness. Indeed, autonomy must yield to fairness when the circumstances call for it. The no-duty-to-warn rule of the common law, for example, has an important exception for cases in which the person who failed to warn also played a role in placing the injured person in peril.<sup>9</sup> It is unfair to allow a person to assert that his autonomy should supersede another's when the risk is attributable in part to him.

In the workplace context, fairness considerations help sway the balance in favor of an employee's right to know. The employer is not merely a passive gatherer of information, but the source of the risk. The activities that bring profit to the employer also impose risks on employees. Employers should not be allowed to profit from an employee's unnecessary ignorance. Considerations of basic fairness, therefore, argue strongly in favor of requiring employers to warn employees about risks of which the employers are aware, and the common law (prior to the enactment of workers' compensation statutes) imposed such a duty to warn upon employers.

Fairness, however, offers little help when the issue is whether employers have a duty to expend resources on labeling, training, information gathering, and data production. When the employer, too, is unaware of the risks, fairness does not as strongly dictate a result. It may be unfair to require employers to ferret out information on risks to employees when such information can only cause employers economic harm. In response, it could be argued that employers can usually write at least some of the costs of data gathering into the prices of the products that they sell, thereby channeling part of the cost to the consumer. This may be fairer than allowing consumers to pay less for products at the employee's expense. Even so, fairness alone cannot effectively dictate *how many* resources should be devoted to information production, gathering, and processing.

*Utility/Efficiency.* The utilitarian would argue that the employer-employee conflict over workplace risks should be resolved in the way that provides the greatest good for the greatest number of people. The primary difficulty with this goal is valuation. What is the value of a one-in-a-thousand risk that a worker will be killed? How many resources should be expended in reducing this risk from one in a thousand to one in a million? Most economists would answer these questions by letting the employers and employees themselves decide in the bargaining process.

According to economists, in the labor market an employee's wage is determined to a large extent by his or her knowledge, skills, credentials, and so on, and the existing demand for those resources. Health and safety risks can also play a role, and the wage for jobs requiring exposure to health and safety risks will be determined in part by the price at which employees are willing to accept additional risks. The employer may either pay the risk premium to

those willing to accept it or make capital expenditures aimed at reducing risks. The employer will "clean up the workplace" to the point at which the last dollar spent on health and safety controls equals the increased wage premiums (and perhaps added workers' compensation expenditures) that would result from the failure to do so. The remaining risks are willingly accepted by the employees. Some economists, in fact, argue that as long as the labor market functions efficiently, there is no need for governmental intervention by agencies like OSHA: the market will ensure that society achieves the mix of production technologies and health and safety controls that maximizes overall welfare.

A crucial component of the free market model of wage and risk determination is its assumption that workers are fully informed about the risks that they face as they bargain over wages. To the extent that risks are unknown to employees, they will undervalue overall workplace risks in wage negotiations. The result will be lower wages and an inadequate incentive to employers to install health and safety devices. In addition, to the extent that employees can avoid risks by taking preventive action, uninformed employees will fail to do so. Society will then underinvest in wages and risk prevention, and overall societal wealth will decline. Moreover, a humane society is not likely to require diseased or injured workers to suffer without proper medical attention. In many cases, society will pick up the tab through Medicare, Medicaid, and welfare payments.

The foregoing argument would support a governmental requirement that employers make existing risk information available to employees in all cases. The analysis is less compelling in the real world where producing, gathering, and conveying information is expensive. The market paradigm can be corrected by erecting a surrogate market in which information itself is purchased and sold. Under this approach, society would produce, gather, and convey information to employees up to the point at which the benefits of the next additional piece of information equals the cost of its production. It is difficult, however, to put a value on an intangible like information; most economists would probably argue that despite the difficulty of determination, its value should be measured by the employee's willingness to pay.

In the interests of efficiency at least some resources should probably be spent on producing, gathering, and conveying information about workplace risks beyond what employers will voluntarily expend. Note, however, that the utilitarian criterion is neutral as to *who* should expend these resources, whether it be employees, employers and their consumers, or the Treasury. The economist would probably argue that the cost should be imposed on the party that faces the lowest "transaction" costs, in this case, the employer or the Treasury, which do not encounter the "coming together" and "free rider" problems that employees face in attempting to collect resources.

*Innovation.* The free market paradigm contains a funda-

mental tension between competition and innovation. A properly functioning competitive market should ensure that a product is sold at the optimal price. If a firm is charging more than this price, its competitors will manufacture and sell the same product for less, forcing the first manufacturer to reduce its price or lose the entire market. The key to this price mechanism is the ability of a competitor to produce the same product at the same cost, which assumes knowledge of the precise makeup of the product and the production process. If, however, competitors have immediate access to this information, a strong incentive to develop a new product or process is lost. The cost of research and development can be very high, and a firm will not undertake these efforts without some assurance that they will be reflected in the price of the new product. At best, the original developer will have a brief lead time to include its costs in the price of its product if its competitors can enter the market at once with products whose prices do not have to reflect research and development costs. Under these circumstances innovation suffers. Consumers may be better off in the short run because they pay lower prices for existing products, but society is worse off without better products and processes. In the long run, manufacturers in countries that protect research and development incentives may ultimately take whole markets away from domestic producers.

Virtually all societies have resolved this tension between competition and innovation by protecting innovative efforts to some degree. Typically, the government grants the innovator a monopoly—a patent—for a fixed period of time, during which research and development costs may be recouped. As a quid pro quo, the government requires the developer to reveal to the world the identity of its patented product and explain how its innovative processes work. The United States currently grants a seventeen-year monopoly for patentable products and processes.

An entirely separate route to market protection is the state common law of trade secrets. State law generally provides a remedy to the holder of a trade secret against anyone who unlawfully appropriates that secret. For a product, process, or other information to be a "trade secret" it must be of commercial value to the holder and it must be kept secret from the rest of the world. The basic purpose of the common law of trade secrets is to punish faithless employees and unscrupulous competitors who engage in industrial espionage and other tactics aimed at eliminating the holder's competitive advantage. A subsidiary purpose, not often alluded to in common law cases, is to foster innovation.

The trade secret alternative is often more attractive to innovators, because the developer does not have to reveal product and process information, and because a trade secret has no explicitly limited duration. In addition, the holder of a trade secret, unlike a patent holder, is not generally required to demonstrate that the innovation is novel and unusual. Not surprisingly, developers often elect the trade

secret route, rather than the patent route, to market protection. But society may never learn the nature of important inventions if the trade secret route is commonly used. Indeed, the entire state common law of trade secrets barely escaped being abolished in the Supreme Court case of *Kewanee Oil Co. v. Bicron Corp.*<sup>10</sup> The Court by a five-to-four majority rejected the argument that state trade secret law was preempted by the federal patent laws.

In the workplace context, employers claim that if they are forced to reveal information about risks to employees, the employees, in turn, will channel the information to competitors, with resulting harm to the employers' competitive position. This two-pronged argument depends, first, upon the validity of the assumption that risk information could be of commercial value to competitors; and second, that federal patent law and state trade secret laws are inadequate to protect research and development incentives.

The first assumption is probably not true. If employees were willing to trust employers (or some independent governmental agency such as OSHA) to characterize workplace risks, the nature of virtually all risks could be communicated without reducing research and development incentives even slightly. Workers, however, are not especially trusting of employers and they are disinclined to place complete faith in an agency that can become the captive of powerful trade associations. The two sides inevitably come to loggerheads over the question of whether the identity of chemicals to which employees are exposed must be revealed to them.

Employees contend that knowledge of chemical identity is essential to an independent evaluation of workplace risks; it is the key to the scientific literature; it is important for a doctor's diagnosis of many occupational diseases. Without this knowledge it is impossible to perform epidemiological studies across industries or to make an independent determination of what further health and safety studies should be performed. In sum, employees argue, chemical identity is essential to an independent assessment of workplace risks.

Employers, on the other hand, contend that the identity of some chemicals is a commercially valuable thing in and of itself. The identity of chemicals in most commercial products cannot always be ascertained by a good analytical chemist; some chemicals, such as catalysts, that are essential to the manufacturing process do not find their way into the marketed product. If those identities are made available to employees, employers argue, this commercially valuable information will inevitably leak out to competitors.

There are at least two rejoinders to the employers' arguments. First, the innovator/employer can nearly always secure a patent. Second, even if the innovator/employer elects to forego the protection afforded by a patent, employees who reveal trade secrets to competitors and competitors who solicit those secrets can be sued under state common law and, in most states, prosecuted under state criminal law. Should employers argue that federal patent law and state trade secret laws afford such flimsy protections that

requiring disclosure will reduce research and development incentives, the debate is likely to turn upon the locus of the burden of proof.

*Paternalism.* It was earlier suggested that paternalism may account for much of the reluctance of employers to inform employees of workplace risks. Management typically takes the position that its health and safety specialists know what is best for employees, and it is not necessary to concern employees with these matters. Occasionally, management representatives will argue that workers will not fully comprehend information on chemical identities and toxicological effects and may use it irrationally. Confused employees will attempt to bid wages up too high and society will either spend too much on wages or be forced to endure industrial strife.

Coming from employers, these arguments are self-serving and entirely unpersuasive. Still, there is a kernel of truth in the proposition that employees will not know how to evaluate the information with which they are provided. It might be more desirable from the employee's point of view to adopt a system of symbols that identifies hazards in broad functional categories. The symbols could vary with increasing risk, thus informing employees in a rough way about the nature of the risk they face. Additionally, the employer's trade secrets could be preserved. Several systems of symbols have been suggested and some are currently in existence, but since they are not standardized, the same or similar symbols can mean different things in different companies.

The primary problem with the symbol solution is again one of trust. Employees are generally unwilling to allow employers or an independent agency, such as OSHA, to characterize risks for purposes of adapting a symbolic warning system to the workplace. Employees will probably want to characterize risks for themselves or allow someone of their own choosing to do so.

### Striking a Balance—The New OSHA Rules

The new OSHA hazard communication rules, although they have been challenged in a court of appeals, indicate specific instances in which, and the means by which, employers must communicate information about risks to their employees. We will now examine the rules in light of the ethical and practical considerations that have been raised.

*Duty to Reveal Information Already in the Employer's Possession.* When the worker insists merely that the employer inform him of risks of which the latter is aware, the balance seems relatively simple. Nearly all of the moral and social considerations, other than the narrow economic self-interest of the employer, militate in favor of disclosing health risks. The only strong opposing consideration is the lost incentive to innovate that might result from the forced revelation of trade secrets. A policy maker might rationally conclude that the enhanced employee autonomy and effi-



ciency and reduced externalities that would result from disclosure outweigh the lost incentive, given the protections available from federal patent and state trade secrecy laws.

The new OSHA rules, however, attempt to accommodate the competing considerations in a way that maximizes the information available to employees while minimizing the probability that trade secrets will escape. The rules require employers to label and inform employees about "hazardous" substances and mixtures, but not about chemicals and mixtures that do not meet the threshold "hazardous" test. The rules give employers the primary responsibility for determining which chemicals in the workplace are hazardous. They would require employers to regard as "hazardous" any substances determined to be carcinogenic by the National Toxicology Program, the International Agency for Research on Cancer, or OSHA itself, in an individual workplace standard. Beyond this, employers are required to

regard as dangerous any substances that have been tested in accordance with established scientific principles and shown to produce hazardous effects at a statistically significant level in a single species of laboratory animal.

The rules also permit employers to refuse to disclose the identities of hazardous chemicals if the employers accurately characterize the chemical identities as "trade secrets." Although this would seem to shift the balance in favor of the employers' interests, the standard does seek to accommodate employee interests in three ways. First, it requires that all containers of hazardous materials be labeled with an appropriate warning to apprise employees of the nature of the risks posed by the contents. Second, it requires employers to disclose all health-related information, other than trade secret chemical identity to employees through MSDSs, and requires that labels on all containers of hazardous substances include identifications capable of refer-

### And in the States, a Patchwork of Laws

Three states—New York, New Jersey, and Connecticut—have filed suits challenging the new OSHA "hazard communication" rules. The suits say that the OSHA regulation is specifically designed to "pre-empt any state law on the issue"; because many state laws mandate more stringent requirements than the OSHA rules, workers would be provided with less, not more, information.

However, state laws vary, often considerably; in addition, state common law and Workmen's Compensation regulations also enter into a determination of what information must be provided, by whom, and to whom. Other laws and regulations often provide additional access rights or disclosure duties, often for specific substances or local circumstances. According to attorney Michael Baram, a professor of health law at the Boston University School of Public Health, "We now have a complex mosaic of laws and regulations at three levels of government" (federal, state, and local) ("The Right to Know and the Duty to Disclose Hazard Information," *American Journal of Public Health*, April 1984, pp. 385-90).

In general, Baram says, the twenty or so states that have enacted right-to-know laws provide a "generic right to access to hazard information in the possession of private firms, state agencies, universities, and other organizations." Most of the laws confer the right to information to workers, and some extend it to private citizens and state and local officials. Although there is no uniformity, most of the state laws provide for some version of the following:

*Identification of hazardous substances*, usually in the form of a state list. A critical factor, says Baram, is the designation of the burden of identifying hazardous substances, whether by state officials or industry;

*Record compilation and retention requirements*, usually stating that the records contain the information

needed to complete a standard Material Safety Data Sheet (MSDS) for OSHA requirements;

*Disclosure duties*, for manufacturers or employers, or both;

*Other hazard communication requirements*, including labeling requirements, posting, and worker education and training requirements;

*Enforcement procedures*, including time allowed for compliance, penalties for violations, administrative hearing rights for those alleging corporate non-compliance, and in some cases judicial review;

*Trade secret protections*, permitting corporate non-disclosure or limited disclosure by state officials, personal physicians, workers, and others who receive the hazard information.

California's law is the most fully developed, Baram asserts. But, he notes there are critical gaps—"no labeling requirements for containers, nor specific penalty provisions for noncompliance." Moreover, the state does not extend access rights to community residents. But thirteen communities in the state have enacted their own provisions to try to fill the gaps.

As communities try to deal with local problems, they create an even more variegated web of regulation. For example, one ordinance in Pennsauken, New Jersey, dealing with "chemical and radioactive substances and petroleum products requires facility plot and storage plans, imposes hazard communication functions on facility owners, requires certain disclosures . . . and site inspection twice a year, provides for citizen access to MSDSs on file with local officials, and prohibits expansion of storage capacity for toxics after April 1, 1982."

This patchwork of laws—sure to be challenged in various jurisdictions—is evidence of a pressing need for clarification. Unless lines of responsibility are clearly drawn, the worker's "right to know" will remain as elusive as ever.—C.L.

ring the reader to the appropriate MSDS. The MSDS must be accessible in the workplace, and it must inform the employee of all of the health hazards attributable to the chemical of which the employer has become aware through an extensive literature search. Finally, the standard requires employers to make trade secret chemical identities available to a health professional who is providing medical or other occupational health service to an exposed employee, but only if the professional submits a written request describing in detail one of six prescribed needs for the information. The employer may require the health professional to sign a confidentiality agreement that specifies in advance the damages for which the professional will be liable in the event of breach of the agreement.

The OSHA rules do seek an accommodation of the competing interests, but they appear to give too much weight to already protected trade secrets. At several points, employees must trust the employer or OSHA, for example, in hazard determination and trade secrecy claims. Except for carcinogens, employers, with some minimal OSHA oversight, determine hazards, while employees and their representatives play no role at this fundamental level. Indeed, they cannot even know the identities of the chemicals that the employers determine to be nonhazardous. Similarly, an OSHA inspector may review a trade secrecy determination, but if the inspector agrees with the employer, there is no further review. Independent scientists interested in assessing employee health risks, who are not rendering particular health services, would not have access to chemical identities. Finally, allowing employers to condition the disclosure of chemical identities to health care professionals on their signing a confidentiality agreement subjects those professionals to an open-ended liability that few will be willing to risk.

*The Duty to Communicate Information.* The least intrusive duty that this expanded "right to know" would impose upon employers is that of labeling risk areas and providing employees with on-the-spot access to information that the employer possesses. Although this obligation will entail some extra expense for employers, it should not in most cases prove overly burdensome. For years, employers have communicated risks to employees through symbols. Although reasonable minds may differ, the additional costs that attend a labeling requirement would appear to be justified by the increased efficiency and enhanced employee autonomy that would result.

The new OSHA rules strike the balance in favor of labeling containers containing hazardous chemicals. In the case of pipes in which hazardous chemicals flow, however, the agency reasoned that pipes rarely rupture, and the added expense of placing labels or placards at uniform intervals along the miles of pipes in some workplaces outweighs the minimal benefits of such labels.

The standard further requires that employers conduct training programs to familiarize employees with the risks

posed by chemicals in the workplace and to teach them how to avoid such risks. This may be the most effective element of the entire standard, because it fosters communication between employees and employers and emphasizes risk-avoidance.

*The Duty to Seek Out Existing Information.* For many employers the duty of searching out additional information would probably not entail a significant burden, because the employer is the exclusive source of risk-related information about the chemical at issue. But with chemicals such as benzene and formaldehyde, for which a worldwide scientific literature exists, a search and evaluation of the literature could be quite expensive. Again, reasonable minds may differ as to whether employers should bear this additional burden.

One solution is to require a government agency to accumulate and communicate information on workplace hazards to employers and employees at little or no charge. Collecting information on chronic workplace risks is part of the mandate of the National Institute for Occupational Safety and Health (NIOSH), and that agency already distributes vast quantities of this information at little cost.<sup>11</sup> The major change that would be required of NIOSH would be to respond to individual requests concerning particular workplaces. One fairly easy accommodation would be to oblige NIOSH to convey, at minimal cost, information on the toxicity of chemicals to employers and workers, and to require employers to produce information concerning the levels of worker exposure to those substances in various areas of the workplace.

The new hazard identification regulations place the entire burden of searching the existing literature on the chemical *manufacturer*. A manufacturer or importer of a hazardous substance must obtain or develop an MSDS for that substance. The MSDS must include specified information, such as the physical and chemical characteristics of the substance, its physical and health hazards, generally applicable precautions for safe handling and use, emergency first-aid procedures, and so on. The manufacturer or importer must search the published and unpublished literature for studies relevant to these informational requirements. Where the literature search results in no relevant information on a particular requirement the MSDS must so indicate.

Several considerations must guide the assessment of whether the new regulations' resolution of the competing interests represents an adequate moral and practical balance. As previously discussed, the situation may simply present a case of "zero-sum" autonomy—if an employee's autonomy is to be enhanced, someone else's autonomy must be violated. One might argue that the autonomy interests of individual human beings should prevail over the autonomy interests of collective entities, such as chemical manufacturing corporations. Indeed, one might argue that corporations should be afforded no autonomy interests whatsoever. Yet this does not acknowledge that some chem-



ical manufacturers are individuals or small companies for whom the expense of performing an extensive literature search may prove very burdensome. It also fails to recognize that unions, which represent the interests of employees, are also collective entities. Therefore, to resolve the question of whose interest is to prevail, we must turn to other theories.

A utilitarian theory can justify imposing on the autonomy of chemical manufacturers. The overall cost to society of gathering health-related information may be less if manufacturers are required to gather that information than if the job is done by employers who use the chemicals or by individual employees. The manufacturer undertakes the expense of performing the literature search once and sends that information along to the employers who purchase its chemicals and ultimately to the employees. This is almost certainly more efficient than requiring individual employers or employees to perform their own literature searches.

While OSHA's resolution of the information-gathering issue is not compelled by any particular moral or practical considerations, it can certainly be justified on those grounds. Whether OSHA has the legal authority to impose such burdens on manufacturers and importers remains to be seen.

*The Duty to Produce New Information.* Health and safety testing can cost millions of dollars, an expense that all but the largest companies can hardly afford. But if no one tests new chemicals routinely, no one will know which chemicals are hazardous and which pose the greatest risks, unless employees become diseased and die.

One solution may be for society to establish an agency to test new chemicals. The National Center for Toxicological Research already does so to some extent, but limited funds force it to focus almost exclusively upon "old" chemicals about which enough information exists to know that more study is necessary.

Another solution may be to require *manufacturers* of new chemicals to test them. While the new OSHA regulations do not require such testing, the Toxic Substances Control Act empowers the Environmental Protection Agency (EPA) to require testing of chemicals that "may present an unreasonable risk of injury to health or the environment."<sup>12</sup> Even if this determination cannot be made, EPA can order testing if the chemical will be produced in "substantial quantities" and there "may be significant or substantial human exposure" to the substance.<sup>13</sup> The act thus attempts to avoid placing unduly burdensome requirements on manufacturers by reserving testing for chemicals that may prove dangerous or may result in extensive worker exposures. Except for the added burden of testing, the competing moral and practical considerations are the same as for the requirement that manufacturers undertake data-gathering efforts. Once again, the resolution of the competing interests represented in the Toxic Substances Control Act seems reasonable, though not compelled.

The act, however, has proved to be ineffective in prac-

tice. The EPA has only rarely required manufacturers to test new or existing chemicals, thus subjecting the agency to criticism in Congress and to a lawsuit in the courts. Nevertheless, the act offers a vehicle for requiring manufacturers to produce health and safety information on a selective case-by-case basis where the agency has some reason to believe that exposure to a substance may be harmful to workers. Rather than requiring all employers routinely to test all workplace chemicals, it is probably better to insist that the EPA exercise its authority less sparingly.

### Physicians Hold the Key

While the new OSHA rules resolve many of the competing moral and practical issues in favor of employee autonomy and efficiency, employer autonomy, paternalism, and innovation dominate its resolution of the crucial trade secrecy issue. In the end, the key to the efficacy of the new OSHA rules will be the availability of chemical identities to physicians and other health care professionals who serve individual employees. In return for information, employers will surely demand substantial pledges of confidentiality from physicians and back them up with substantial damages if trade secrets are disclosed. Will health professionals agree to honor trade secret restrictions? Will they agree to financial penalties for revealing confidential information to workers or others? Will they be willing to risk expensive litigation if the chemical identity becomes known to competitors? The new OSHA rules have resolved the competing employee and employer interests by placing an additional burden on the health professional. The successful implementation of the new OSHA rules may depend on the willingness of those who treat workers to bear that burden.

### REFERENCES

- <sup>1</sup>National Academy of Sciences, *Principles for Evaluating Chemicals in the Environment* (Washington, DC: 1975), p. 115.
- <sup>2</sup>Toxic Substances Control Act, 15 U.S.C. § 2601 et seq.
- <sup>3</sup>Occupational Safety and Health Administration, Hazard Communication, Final Rule, 48 Fed. Reg. 53280 (1983).
- <sup>4</sup>45 C.F.R. SS 46.101-46.124 (1982).
- <sup>5</sup>Thomas O. McGarity and Sidney Shapiro, "The Trade Secret Status of Health and Safety Testing Information: Reforming Agency Disclosure Policies," 93 Harvard Law Review Reg. 837, 849 (1980) (4.5 and 8.5 years of testing at an average cost of 2.7 to 4.7 million dollars).
- <sup>6</sup>Restatement (2d) of Torts § 531iii (1965).
- <sup>7</sup>See Roger M. Milgrim, Vol. 1 *Trade Secrets*, (New York: Bender, Matthew, and Co., 1978), ch. 1. Compare Milgrim, *supra* (trade secrets are property) with John C. Stedman, "Trade Secrets," *Ohio State Law Journal*, Vol. 23, No. 4, 1962, (trade secrets are not property) and Risdale Ellis, *Trade Secrets* (New York: Baker, Voorhis, 1953) § 6 (same).
- <sup>8</sup>Barry M. Mitnick, *The Political Economy of Regulation* (New York: Columbia University Press, 1980), p. 111.
- <sup>9</sup>See Restatement (2d) of Torts § 321 (1965).
- <sup>10</sup>Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470 (1974).
- <sup>11</sup>See Occupational Safety and Health Act, 29 U.S.C.A. §§ 671(d)(1), 673 (1980).
- <sup>12</sup>Toxic Substances Control Act, 15 U.S.C.A. § 2603(a)(1)(A)(i).
- <sup>13</sup>15 U.S.C.A. § 2603(a)(1)(B)(i).

# **Federal Register**

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**Monday**  
**August 24, 1987**

*See early  
background  
section.*

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## **Part III**

## **Department of Labor**

**Occupational Safety and Health  
Administration**

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**29 CFR Parts 1910, 1915, 1917, 1918,  
1926, and 1928**

**Hazard Communication; Final Rule**



## DEPARTMENT OF LABOR

## Occupational Safety and Health Administration

29 CFR Parts 1910, 1915, 1917, 1918, 1926, and 1928

[Docket No. H-022D]

## Hazard Communication

AGENCY: Occupational Safety and Health Administration (OSHA); Labor.

ACTION: Final rule.

**SUMMARY:** OSHA is revising its Hazard Communication Standard (HCS) (29 CFR 1910.1200), which currently applies to the manufacturing sector, to cover all employers with employees exposed to hazardous chemicals in their workplaces. Expansion of the scope of the HCS requires non-manufacturing employers to establish hazard communication programs to transmit information on the hazards of chemicals to their employees by means of labels on containers, material safety data sheets, and training programs. This action will reduce the incidence of chemically-related occupational illnesses and injuries in non-manufacturing workplaces.

**DATES:** Effective September 23, 1987. The revised standard published today requires that chemical manufacturers, importers, and distributors ensure that material safety data sheets are provided with the next shipment of hazardous chemicals to non-manufacturing employers or distributors after September 23, 1987. All employers in the non-manufacturing sector are to be in compliance with all provisions of the standard by May 23, 1988.

**FOR FURTHER INFORMATION CONTACT:** Mr. James F. Foster, Office of Information and Consumer Affairs, Occupational Safety and Health Administration, 200 Constitution Avenue, NW., Room N3637, Washington, DC, 20210; telephone (202)523-8151.

**SUPPLEMENTARY INFORMATION:** References to the rulemaking record are made in the text of this preamble, and the following abbreviations have been used:

*H-022, Ex.:* Exhibit number in Docket H-022, which includes Dockets H-022A and H-022B.

*Ex.:* Exhibit number in Docket H-022D for exhibits collected since the 1985 Court remand.

*Tr.:* Public hearing transcript page number.

Copies of the official list of entries in the record, as well as the exhibits

themselves, are available from the OSHA Docket Office, Dockets H-022 and H-022D, Occupational Safety and Health Administration, 200 Constitution Avenue, NW., Room N3670, Washington, DC, 20210; telephone (202)523-7894.

## I. Background

## A. History of OSHA's Hazard Communication Standard

When Congress passed the Occupational Safety and Health Act of 1970, 29 U.S.C. 651 *et seq.* (the Act), it included language in section 6(b)(7) stating that any occupational safety or health standard promulgated by the Secretary of Labor under section 6(b) rulemaking authority "shall prescribe the use of labels or other appropriate forms of warning as are necessary to insure that employees are apprised of all hazards to which they are exposed, relevant symptoms and appropriate emergency treatment, and proper conditions and precautions of safe use or exposure." Whenever OSHA has promulgated a substance-specific rule to address the hazards of a particular chemical, this Congressional directive has been followed. However, given the universe of chemicals present in American workplaces (as many as 575,000 hazardous chemical products), and the time-consuming nature of OSHA's rulemaking process, it soon became clear that little information would be available to employees if this substance-by-substance approach were the only one pursued. The Agency thus decided to address the issue of hazard information transmittal on a generic basis. OSHA's experience, as well as our rulemaking record to date, supports the view that when employees have access to, and understand, the nature of the chemical hazards they are exposed to during the course of their employment, they are better able to participate in their employers' protective programs, and take steps to protect themselves. In addition, providing employers with complete chemical hazard information enables them to better design and implement protective programs. Together these actions will result in more effective worker protection and the occurrence of fewer illnesses and injuries due to exposure to chemicals. *See, e.g.,* 48 FR 53282-84, 53321, 53323-24, 53327-29 (Nov. 25, 1983); 47 FR 12093-12101 (Mar. 19, 1982).

In 1974, OSHA established a Standards Advisory Committee on Hazardous Materials Labeling under section 7(b) of the Act to develop guidelines for the implementation of section 6(b)(7). On June 6, 1975, the

Committee submitted its final report to the Assistant Secretary for Occupational Safety and Health which recommended categorization and ranking of chemical hazards, as well as provisions for labels, material safety data sheets, and training programs for all workers.

The National Institute for Occupational Safety and Health (NIOSH) published a criteria document in 1974 which also recommended a standard to OSHA. The document, entitled "A Recommended Standard . . . An Identification System for Occupationally Hazardous Materials," included provisions for labels and material safety data sheets.

In 1976, Congressman Andrew Maguire from New Jersey and the Health Research Group petitioned OSHA to issue a standard to require the labeling of all workplace chemicals. The House of Representatives' Committee on Government Operations (1976 and 1977) recommended that OSHA enforce the health provisions of the Act by requiring manufacturers to disclose any toxic ingredients in their products, and by requiring all employers to disclose this information to workers.

On January 28, 1977, OSHA initiated the public participation phase of the rulemaking process on these issues by publishing an advance notice of proposed rulemaking (ANPR) on chemical labeling in the *Federal Register* (42 FR 5372). The ANPR requested comments and information on the need for such a standard, and the particular provisions that should be included. The Agency received eighty-one comments. Most supported the need for the rule, but opinions as to the specific approaches to be pursued varied significantly.

On January 16, 1981, OSHA published a notice of proposed rulemaking (NPRM) entitled "Hazards Identification" (46 FR 4412). The rule would have required manufacturing employers to assess the hazards in their workplaces using specified procedures, and to label containers. The requirements were quite different from the comprehensive approach previously recommended by the Standards Advisory Committee and NIOSH as they did not include provisions for material safety data sheet development or training.

OSHA withdrew the NPRM on February 12, 1981 (46 FR 12214) for further consideration of regulatory alternatives. A new NPRM was published on March 19, 1982, and was entitled "Hazard Communication" (47 FR 12092). It proposed to require producers of chemicals to evaluate them to determine their hazards, label

containers, and provide material safety data sheets to manufacturing purchasers of their products. The standard also proposed that all employers in the manufacturing sector have a hazard communication program, label in-plant containers, maintain and provide access to material safety data sheets, and train workers. The proposal also invited comments on whether non-manufacturing employers should be subject to the rule.

Following a period for written comments, informal public hearings, and a post-hearing comment period, OSHA published the final Hazard Communication Standard on November 25, 1983 (48 FR 53280). The provisions of the final rule are very similar to those described above for the proposal, i.e., chemical manufacturers and importers are required to evaluate the hazards of the chemicals they produce or import, and all manufacturers are required to have hazard communication programs for their employees exposed to hazardous chemicals. This comprehensive standard was designed to reduce the hazards faced by manufacturing workers when they handle chemicals without adequate information on, among other things, the physical and health hazards of the chemicals, safe handling precautions, and emergency and first aid procedures. See, e.g., 48 FR 53321. OSHA found that inadequate communication regarding chemical hazards presents a significant risk to workers. See, e.g., 48 FR 53321. *Accord United Steelworkers of America v. Auchter*, 763 F.2d 728, 735 (3d cir. 1985) (*United Steelworkers I*) ("[I]nadequate communication is itself a hazard, which the standard can eliminate or mitigate.").

OSHA decided to limit the scope of coverage of the HCS to the manufacturing sector based on an analysis of the chemical source illnesses and injuries occurring in each industrial sector. (See discussion at 48 FR 53284-86.) In particular, since the purpose of the standard is to reduce the occurrence of such incidents, OSHA determined that the rule should focus on those industrial sectors where they are recorded most frequently. The Agency found that over half of these incidents occur in manufacturing, although manufacturing accounts for only about 30 percent of total employment. Thus OSHA decided that the greatest need for transmittal of chemical hazard information is in the manufacturing sector. The Agency further recognized that since chemicals are developed and produced in the manufacturing sector, the hazard information would have to be

developed in the manufacturing sector first, regardless of the eventual coverage of the rule. OSHA believed that requiring the development of the chemical hazard information in manufacturing would lead to its increased availability in the other sectors without the standard specifically requiring the transmittal of hazard information to those sectors. The Agency acknowledged that hazardous chemicals are pervasive throughout industry and that chemical source injuries and illnesses have been recorded in all industry sectors. See, e.g., 48 FR 53282-87. See also *United Steelworkers I*, 763 F.2d at 737. The Agency planned to make a decision regarding the explicit coverage of the non-manufacturing sectors once the HCS was in effect, and a determination could be made as to whether the other industries were, in fact, obtaining the information they needed. OSHA believed that the Act gives the Secretary of Labor and the Agency the authority to regulate the most hazardous industry first under section 6(g), 29 U.S.C. 655(g), which states in part:

In determining the priority for establishing standards under this section, the Secretary shall give due regard to the urgency of the need for mandatory safety and health standards for particular industries, trades, crafts, occupations, businesses, workplaces or work environments.

#### B. Court Challenges

The HCS was challenged in the U.S. Court of Appeals for the Third Circuit (hereinafter referred to as "the Court" or "the Third Circuit") on several grounds. The Court issued its decision on May 24, 1985 (*United Steelworkers I*, 763 F.2d 728 (3d Cir. 1985)). The standard was upheld in most respects, but three issues were remanded to the Agency for reconsideration. The decision was not appealed.

First, the Court concluded that the definition of trade secrets incorporated by OSHA included chemical identity information that was readily discoverable through reverse engineering and, therefore, was "broader than the protection afforded trade secrets by state law." The Court directed the Secretary of Labor to reconsider a trade secret definition which would not include chemical identity information that is readily discoverable through reverse engineering. Second, the Court held the trade secret access rule in the standard invalid insofar as it limited access to health professionals, but found the access rule otherwise valid. The Secretary was directed to adopt a rule permitting access by employees and

their collective bargaining representatives to trade secret chemical identities. OSHA complied with the Court orders regarding the two trade secret issues in a separate rule, published in final form on September 30, 1986 (51 FR 34590).

The third issue remanded to OSHA involved the scope of the standard's coverage. As noted, the HCS currently applies to employers and employees in the manufacturing sector. The Court rejected the Secretary's contention that section 6(g) gave him the flexibility to regulate the most hazardous sector first before commencing rulemaking for other sectors in which workers are exposed, to a lesser extent, to the same hazards. The Court agreed that section 6(g) "clearly permits the Secretary to set priorities for the use of the Agency's resources, and to promulgate standards sequentially." 763 F.2d at 738. The Court also acknowledged that "there is substantial evidence in the record that the manufacturing sector has the highest incidence rate of chemical exposures which the Agency has authority to regulate." *Id.* at 737. However, the Court held that it is not enough merely to establish that the sector selected for coverage presents greater hazards than those that have been left for later rulemaking. Given the record evidence of high levels of exposure to hazardous chemicals in several job settings outside the manufacturing sector, the Secretary was required to explain "why coverage of workers outside the manufacturing sector would have seriously impeded the rulemaking process" or "why it is not feasible for the same standard to be applied in other sectors where workers are exposed to similar hazards." *Id.* at 738.

The Court was not persuaded that the HCS would provide protection to uncovered workers because chemical hazard warnings would be found on container labels and detailed information on material safety data sheets would become increasingly available in the unregulated sectors as a result of being required in manufacturing. *Id.* There was considerable record evidence that indicated that workers in the non-manufacturing industries are exposed to chemical hazards. The Court concluded that the Secretary had not stated why it would not be feasible to require employers in non-manufacturing industries to give workers material safety data sheets and training as required in the manufacturing sector. *Id.* The Court maintained that the Act required an explanation why the same information, that is, labels, material



safety data sheets, and training, is not needed for workers in other sectors similarly exposed to hazardous chemicals. *Id.* at 738-39. Therefore, as previously indicated, OSHA was directed by the Court to reconsider the application of the standard to employees in the non-manufacturing industries and to order its application to these other sectors unless the Secretary can state reasons why this application would not be feasible. It should be noted that in previous OSHA litigation, the Courts have defined "feasibility" in terms of OSHA rules as meaning "capable of being done." *American Textile Manufacturers Institute v. Donovan*, 452 U.S. 490, 508-509 (1980)(ATMI).

OSHA decided not to appeal this decision. As stated in the preamble to the final rule (48 FR 53286):

It should be emphasized that the Agency does not believe that employees in other industries are not exposed to hazardous chemicals, or that they should not be informed of those hazards. OSHA has merely exercised its discretion to establish rulemaking priorities, and chosen to first regulate those industries with the greatest demonstrated need.

OSHA was prepared to evaluate the HCS' effectiveness in getting information to downstream employers, and to extend the standard if necessary. In fact, the Agency initiated the process on March 4, 1985, prior to the Court decision, when the Assistant Secretary asked the National Advisory Committee on Occupational Safety and Health (NACOSH) to give OSHA its recommendation on the need and feasibility of expanding the scope of the HCS to other industries. On June 21, 1985, NACOSH adopted the following recommendation:

[NACOSH] strongly endorses the OSHA effort to promulgate a Hazard Communication Standard and selection of the manufacturing sector for its initial scope of coverage. It is the consensus recommendation of the Committee that the scope of the current Hazard Communication Standard should be expanded to cover all employees in all industries at as early a time as possible. Complete implementation may require phasing in gradually. The BLS [Bureau of Labor Statistics] incidence rates of occupational illnesses, and other appropriate factors, should be primary considerations in expanding the coverage. The Committee further recommends that OSHA establish a task force to address these issues.

Meanwhile, OSHA's review of the rulemaking record showed that while there was considerable evidence concerning the need for hazard communication in other industries, and general support for a finding that the HCS would be feasible for non-

manufacturing, there was a need for more direct evidence of the feasibility of expanded coverage, particularly in the area of economic feasibility. Accordingly, OSHA believed it was necessary and appropriate to initiate further rulemaking. OSHA commissioned a study of the economic impact of extending the HCS to the fifty major non-manufacturing industry groups within its jurisdiction, and issued an Advance Notice of Proposed Rulemaking (ANPR) seeking public comment on present hazard communication practices outside manufacturing, and the likely impact of extending the HCS to industries significantly different from the prototypical manufacturing worksites on which the original standard was based. 50 FR 48794 (Nov. 27, 1985). Over two hundred responses were received. Based on this newly acquired evidence and on the previous rulemaking record, OSHA was in the process of drafting a proposed rule which it expected to publish for notice and comment, followed by promulgation of a final rule in early 1988.

On January 27, 1987, however, the United Steelworkers of America, AFL-CIO-CLC and Public Citizen, Inc., petitioners in the 1985 challenge, filed a Motion For An Order Enforcing The Court's Judgment and Holding Respondent In Civil Contempt. Petitioners claimed that the Court's 1985 order had not authorized OSHA to embark on further fact gathering; that OSHA should have made a feasibility determination on the 1985 rulemaking record. Petitioners also argued that even if further fact gathering had been allowed by the Court's order, OSHA's pace was unduly slow.

In response, OSHA noted that the Court's 1985 order did not specify that OSHA should act on the then-existing record. OSHA believed that seeking further evidence on feasibility in non-manufacturing was appropriate in light of its statutory obligation to issue rules that are well grounded in a factual record. OSHA also asserted that, consistent with Supreme Court precedent, the Agency should be permitted to exercise its discretion in determining the appropriate rulemaking procedures for complying with the Court's remand order. Lastly, the Agency argued that its schedule to complete the rulemaking was reasonable and did not constitute undue delay.

On May 29, 1987, the Court issued a decision holding that the Court's 1985 remand order required consideration of the feasibility of an expanded standard without further rulemaking. *United*

*Steelworkers of America, AFL-CIO-CLC v. Pendergrass*, No. 83-3554 (3d Cir.) (*United Steelworkers II*). The Court declared that adequate notice had been provided to non-manufacturers during the original rulemaking that they might be covered by the HCS, *id.* slip op. at 7-10, 16-17, that the answers to the remaining questions OSHA may have had regarding feasibility were "self-evident" or "readily ascertainable" from the original record, *id.* at 15, 17, and that further fact finding was "unnecessary", *id.* at 15. The Court ordered the Agency to issue, within 60 days of its order, "a hazard communication standard applicable to all workers covered by the OSHA Act, including those which have not been covered in the hazard communication standard as presently written, or a statement of reasons why, on the basis of the present administrative record, a hazard communication standard is not feasible." *Id.* at 19. OSHA is responding to the Court order by issuing this final rule expanding the scope of the HCS' coverage to all workers within OSHA's jurisdiction.

OSHA continues to believe that it should have been permitted to follow the rulemaking procedures in the Act by issuing a notice of proposed rulemaking and developing a public record prior to promulgating a final rule. However, as discussed in the following section regarding feasibility, the Agency does not have sufficient evidence in the current record to indicate that the rule would be infeasible for any part of the non-manufacturing sector. OSHA recognizes that information submitted during a normal rulemaking process might have resulted in further changes to the provisions to better address feasibility or practicality concerns.

In light of the fact that there may be additional information regarding the feasibility or practicality of the rule as it applies to some non-manufacturing sectors, the Agency invites persons to provide such information and any recommendations for further rulemaking within sixty days of the date of publication of this final rule. OSHA will then evaluate these submissions and determine whether any additional rulemaking is required. Data or evidence related to feasibility should be addressed to: Directorate of Health Standards Programs, Occupational Safety and Health Administration, Attention: Hazard Communication, 200 Constitution Avenue, NW., Room N3718, Washington, DC, 20210.



### C. Feasibility of the Standard

In the context of OSHA standard setting, feasibility constraints limit the extent to which standards can address health and safety concerns within the workplace. Section 6(b)(5) of the Act, 29 U.S.C. 655(b)(5). Feasibility analysis involves an inquiry to determine whether a standard is both technologically and economically capable of being done. *ATMI*, 452 U.S. at 512-13 and 513 n.31 (1980). As the Third Circuit has indicated, "the Secretary was able to determine that the hazard communication standard could feasibly be applied in the manufacturing sector." *United Steelworkers II*, slip op. at 16. The Court further noted that OSHA had concluded in the final rule that importers and distributors could feasibly comply with the HCS based on the evidence in the record and that "this is equally true of all non-manufacturer user employers. Plainly, the ease with which the same information can be utilized by those employers can be easily determined from the information already in the record." *Id.* at 18. The Third Circuit has ordered expansion of the HCS to all workers unless OSHA can give reasons why the HCS is infeasible for particular industries, and has forbidden OSHA from gathering further evidence.

OSHA concludes that the original HCS rulemaking record (Docket H-022), does not contain credible evidence indicating the standard would be infeasible for any industrial sector. In fact, OSHA believes that the original record on the whole supports a finding that the performance-oriented HCS is feasible for all industries. In addition, the Agency's experience under the present HCS and other pertinent OSHA standards, the promulgation and implementation of State and local right-to-know laws, and evidence and data gathered by the Agency since the 1985 Court order (Docket H-022D), further supports OSHA's conclusion that non-manufacturing employers are "capable" of implementing the HCS for their employees potentially exposed to hazardous chemicals.

OSHA found that the HCS is technologically feasible for manufacturers, and believes it is clearly technologically feasible for non-manufacturers as well. Twelve of the OSHA-approved State plan States have already extended the rule to cover the non-manufacturing sector, and the requirements are being enforced in those States as workplace standards. This experience provides practical evidence of the technological feasibility of the requirements of the rule. The more

technical aspects of the standard—scientific evaluation of chemicals to determine their hazards and creation of material safety data sheets and warning labels—remain a burden on those producing or importing hazardous chemicals. The technical expertise needed to develop the chemical hazard information, and its associated costs, is subsumed within the current rule covering manufacturers, and it has been found feasible. All other requirements in the HCS, such as maintaining material safety data sheets, developing a written hazard communication program, and designing and implementing chemical hazard training, are conventional and common business practices that are administrative in nature, and no technological barriers prevent their development and implementation. OSHA has mandated such practices for some non-manufacturing workplaces since the early 1970's. *See, e.g.*, 29 CFR 1915.97 (requiring material safety data sheets and chemical hazard training for shipyard workers); 1917.22 (requiring marine terminal workers be instructed as to the chemical hazards presented by cargo); 1918.86 (requiring chemical hazard instruction for longshore workers); 1926.21 (requiring chemical hazard training for construction workers). *See, also*, H-022, Ex. 90 (journal article regarding usefulness of material safety data sheets, written by Dow Chemical Company representatives and published in December 1957).

OSHA also believes that the economic feasibility of extending the current HCS to the non-manufacturing sector is supported by the record. Simply put, economic feasibility is established by evidence that the standard will not threaten the regulated industry's "long-term profitability." *ATMI*, 452 U.S. at 531 n.55. Costs associated with expanding the standard to cover non-manufacturing workplaces will stem from the initial start-up costs and the less substantial recurring program implementation and upkeep costs for: maintaining material safety data sheets received from manufacturers, importers, distributors, and other employers; creating labels for in-house containers of hazardous chemicals; developing a written hazard communication program, including a list of hazardous chemicals present in the workplace; and developing and implementing chemical hazard training.

After careful analysis of the original HCS rulemaking record, OSHA concludes that, as a whole, it supports a finding that non-manufacturers are economically capable of providing

employees chemical hazard information in the manner prescribed by the HCS. As noted previously, development of the evidentiary record for the HCS began as early as 1974. In that year, NIOSH recommended that OSHA adopt a standard requiring all employers to implement a system of labels, placards and material safety data sheets in their workplaces to inform employees about the chemical hazards to which they may be exposed. (H-022, Ex. 4). The NIOSH recommended standard, like the HCS, included requirements that employers ensure that chemicals in the workplace are marked with hazard warnings and that material safety data sheets are "filed in the establishment" where they are "readily available for examination by workers". *Id.* at 3. This hazard identification and warning system was designed to additionally "help in the education of employees and provide the data necessary for employers to take proper action to safeguard their employees." *Id.* at 1. NIOSH concluded that such a chemical hazard communication program was appropriate for all employers. *See, also* comments of the Air Transport Association, H-022, Ex. 5-3 ("[T]he airlines have no general objection to the [NIOSH] Criteria . . . [except that it] should clearly delineate the responsibility of the manufacturer supplying the necessary data on the Material Safety Data Sheets.").

The 1975 report of the Standards Advisory Committee on Hazardous Materials Labeling (H-022, Ex. 3), recommended a "total system" approach to chemical hazard communication not unlike the comprehensive approach of the current HCS. The Advisory Committee, which included representatives of non-manufacturers, recommended labeling and placarding systems, the creation and availability of material safety data sheets, and employee education and training programs for all workers potentially exposed to hazardous chemicals. The Committee recognized that these practices "are not new and novel concepts" but "well established in many industries and professional associations as well as regulated by various governmental agencies and international agreements." *Id.* at 3. The Advisory Committee made "no distinction among employees in different sectors of the economy." *United Steelworkers II*, at 7.

As the Court has stated, *id.* at 8, the 1977 ANPR requested public comment from all interested persons on whether a chemical hazard communication standard should be promulgated by

OSHA. Comments on the Standards Advisory Committee's recommended standard were specifically requested. Although OSHA did not receive comment from employers in every industrial sector, those non-manufacturers that did respond supported a comprehensive hazard communication system for their workplaces. For example, Sea-Land Service, Inc. (H-022, Ex. 2A-6), supported requirements for container labels (consistent with transportation labels already in place), the availability of material safety data sheets to persons in the workplace, and individual training programs. Panhandle Eastern Pipe Line Company (H-022, Ex. 2A-7) and Truckline Gas Company (H-022, Ex. 2A-9) both "agree[d] that employees need information about the product with which they work" and that this could be accomplished by requiring suppliers of hazardous chemicals to label containers with the "degree and nature of the hazard" and by requiring user employers to "inform employees of the hazard." Those companies had already developed "a special manual of data for all chemicals, solvents and cleaners used in [their] operations and maintenance."

Wisconsin Electric Power Company (H-022, Ex. 2A-30), stated that given adequate labels and material safety data sheets from chemical manufacturers and suppliers, chemical users such as they "would be in a position to prepare their own Material Safety Data Sheets, hazard placard systems, proper labeling of auxiliary and secondary containers and training of personnel who may use or otherwise contact this material." Recognizing the need for "proper labeling, storage, handling and instructions in the use of hazardous materials," Wisconsin Electric Power Company had already "developed and put into effect a Hazardous Materials Control Program." Southern Gas Association (SGA) (H-022, Ex. 2A-75) also believed that suppliers and manufacturers of hazardous materials should be required to provide proper labeling, warnings and other hazard information to all employers using these materials. SGA further suggested that OSHA promulgate a standard directing all employers "to establish required training for employees that may handle or otherwise be exposed to any hazardous materials." These comments and others filed in response to OSHA's 1977 ANPR indicate that many non-manufacturers consider maintaining labels received on chemical containers, making material safety data sheets received from suppliers available

to employees, and providing information and training to employees regarding the chemical hazards present in the workplace to be economically feasible. See, also H-022, Exs. 2A-2 (Schirmer Engineering Corporation); 2A-31 (Union Electric Company); 2A-32 (Texaco); 2A-36 (American Trucking Association, Inc.).

Moreover, comments received from non-manufacturers at later stages of the original rulemaking also indicate they are capable of implementing the performance-oriented HCS. In fact, there are comments which indicate that many of these requirements were already being implemented in the non-manufacturing sector.

For example, the Western Agricultural Chemicals Association indicated that its members provide material safety data sheets to anyone who requests them, including customers in the non-manufacturing sector (Tr. 2873). Their representative further stated that "[i]n the agricultural field, I would say most technical products have material safety data sheets. I would say maybe 75% to 80% of the inerts have them . . ." (Tr. 2881).

There was also testimony from employee representatives, including those in the non-manufacturing sector such as airline mechanics, that they requested and were able to obtain material safety data sheets from manufacturers for products in use in their facilities. Tr. 2819-21, 3131, 3828. One union testified that a joint employee-employer safety committee received every material safety data sheet it requested, and that the union then trained workers to be able to use the information. Tr. 2824-A.

Another non-manufacturing union representative, the International Brotherhood of Painters and Allied Trades, indicated that it shared collected material safety data sheets with employers who needed such information. "[T]o contractors who make requests of us for information, we do provide them material safety data sheets, write-ups on the chemicals and the products . . . We do everything—our union does everything they can as a service to our contractor members to provide them with the information they need to operate safely. . . ." Tr. 2101-2.

Other large companies with manufacturing as well as non-manufacturing establishments testified that information was made available throughout their corporations, and they provide information to all customers regardless of industry. For example, Atlantic Richfield Company testified that they have a company-wide material

safety data sheet policy and program. "[U]nder this program, a material safety data sheet is recognized as a basic source of information for practical health, safety and environmental information. The MSDS whether generated internally or obtained from a supplier is used to communicate relevant data within the company and to outside customers. It is the responsibility of our various operating companies to distribute copies of each MSDS to customers and company facilities for employee instruction and/or information." Tr. 2439. Their company facilities include such non-manufacturing operations as petroleum production.

Similarly, Exxon, Inc. testified that it too provides material safety data sheets to all customers: "[W]e consider a material safety data sheet a matter of public information that's part of our literature, regularly available to anyone who requests it." Tr. 1708-09. See, also, Shell testimony at Tr. 1712 and 2500, and Uniroyal Chemicals at Tr. 1464.

Therefore, based on the recommendations of NIOSH, the Standards Advisory Committee and the comments received from non-manufacturers and their representatives participating in the lengthy rulemaking, OSHA concludes that the original record as a whole indicates that non-manufacturers are capable of complying with the HCS. As long as chemical suppliers provide adequate chemical hazard information in the form of labels and material safety data sheets to non-manufacturers using the chemicals, those user employers, like the manufacturers who use hazardous chemicals which they themselves did not manufacture or import, can develop hazard communication programs and provide employees information and training on the chemical hazards in the workplace.

In light of the evidence in the original rulemaking record, OSHA concludes that non-manufacturers can incorporate the HCS' administrative practices and provide chemical hazard information to their employees. OSHA believes all employers can ensure that containers of chemicals are maintained with proper hazard warnings just as an employer would maintain labels or marks on containers to ensure that employees comprehend their contents and intended uses. Likewise, all employers are able to acquire and maintain up-to-date material safety data sheets for hazardous chemicals just as they are able to acquire and maintain up-to-date cost information and performance specifications on those very same



chemicals. OSHA also concludes that it is feasible for employers to inform and train their workers regarding the chemical hazards present in the workplace just as employers are capable of training their workers to perform their jobs in an efficient and speedy manner. These conclusions are further supported by the experience and evidence gathered by the Agency since promulgation of the HCS for manufacturers in 1983.

At this time, OSHA has no evidence indicating that the profitability of manufacturers generally, or even chemical manufacturers in SIC 28 (by far the most economically burdened by the HCS, *see* 48 FR 53333), has been threatened by complying with the HCS. Manufacturers have had the considerable costs of evaluating, collectively, hundreds of thousands of chemicals for their hazards and creating corresponding labels and material safety data sheets since November 1985, as well as the costs of implementing an in-plant program by May 1986. After thorough analysis, OSHA determined that the current HCS would not impose a substantial burden on manufacturers and that the HCS was economically feasible for them. *See* 48 FR 53333. Experience to date in implementation of the rule supports that finding. For example, if manufacturers were experiencing significant feasibility problems in complying with the rule, OSHA would have expected to receive numerous substantive comments regarding those problems in response to the 1985 ANPR questions addressing feasibility concerns. However, although some manufacturing employers objected to some requirements, substantive comments demonstrating infeasibility were not received, which appears to support OSHA's conclusion that compliance with the HCS was, and continues to be, economically feasible for manufacturers and indicates the standard is also feasible for non-manufacturers. In fact, some manufacturers took the opportunity to state their continuing support for the rule and its requirements. *See, e.g.,* H-022D, Ex. 2-14. (The Chemical Manufacturers Association "strongly believes that the substantive provisions of the Hazard Communication Standard are sound as a matter of science and policy."); Ex. 2-67 (Economics Laboratory, Inc. "considers hazard communication worth the effort.")

Generally, the HCS costs to non-manufacturers would be a function of the number of hazardous chemicals in the workplace, and the number of employees exposed to hazardous

chemicals. If employees are not potentially exposed to hazardous chemicals in a particular work operation, the proposed standard does not apply. Also, to the extent that employers are voluntarily providing information, or providing information in order to comply with other regulations or laws, this should significantly reduce the burden of compliance with this rule. Approximately 32 States and several localities already have hazard communication/right-to-know laws covering non-manufacturing industries indicating that many others seeking to protect the safety and health of workers have concluded that industry can comply with these types of requirements. In fact, as evidenced in the original rulemaking record, many companies involved in interstate commerce would benefit from promulgation of a uniform Federal standard as it would preempt different and potentially conflicting State and local laws and lessen overall compliance burdens. 48 FR 53263. *See also, e.g.,* H-022D, Ex. 2-83 (The American Gas Association "believes that a Federal Standard, rather than a variety of differing state regulations, would best serve the needs of the natural gas industry, the employees in our industry, and the general public as well."); Ex. 2-108 (The National Constructors Association has found that "[i]t has been nearly impossible to establish uniform interstate policy" and "can clearly see the wisdom of having one workable/cost-effective government regulation that addresses hazard communication.")

Although the original HCS record contained no evidence to indicate the HCS would be economically infeasible for non-manufacturing, OSHA recognized that potential feasibility concerns could arise, for example, with small businesses, businesses with large employee turnover (such as retail stores and construction companies), and businesses with rapid turnover of hazardous chemicals in the workplace (such as warehouses and marine cargo operations). However, based on the original HCS rulemaking record, and additionally based on: (1) The apparent successful implementation of the present HCS by manufacturers; (2) the implementation of other Federal communication standards and of State plan States' laws by non-manufacturers; and, (3) on regulatory impact and regulatory flexibility analyses prepared by the Agency since the 1985 Court order and summarized in Section III of this document, OSHA concludes that the provisions in the current Hazard

Communication Standard are economically feasible for all of the non-manufacturing industries.

OSHA is also aware that many employers in the manufacturing sector have been able to satisfy some of their responsibilities under the HCS by using compliance materials obtained from various sources. Trade associations, for example, have frequently been instrumental in assisting their members in developing programs suitable for their type of industrial facility. This is particularly appropriate given the performance orientation of the HCS, and the flexibility employers are permitted to design appropriate compliance programs. Sample written programs and other written materials, as well as training programs regarding the requirements of the rule, have been developed and provided to association members and have facilitated compliance efforts. The ability of associations to accomplish this successfully demonstrates technical feasibility and enhances economic feasibility. Trade associations in states covering non-manufacturing workplaces under their right-to-know rules have also been able to develop materials to assist their members to comply. Materials developed for these State laws or for the manufacturing sector under the current HCS could be adapted for the non-manufacturing workplaces newly covered by the HCS.

There have also been a number of services provided by consultants in the private sector. These range from very specific items, such as computer programs to manage information, to a comprehensive compliance strategy, where a consultant will devise an entire program to enable a facility to comply. Such services will often minimize the burden of compliance by minimizing the time the facility staff must spend to develop and implement a program. The availability of such programs also provides support for the conclusion that the rule is feasible.

For large companies, the burden per facility will often be minimized by corporate development of a standardized program. It can be expected that most corporations with multiple facilities will use this approach (this has occurred in the manufacturing sector as well).

Therefore, OSHA concludes that similar resources will be available to employers in the non-manufacturing sectors, which further demonstrates that the rule is feasible for implementation in all sectors. In fact, given the pre-existing coverage of non-manufacturing under various state rules, and the extent of the

materials developed in response to the current HCS which would also be applicable in non-manufacturing, additional development of such materials should require considerably less effort and be easier for non-manufacturers to obtain.

Nevertheless, OSHA recognizes that the unique characteristics of some businesses render certain provisions of the current standard unnecessary or ineffective in communicating the hazards of chemicals to workers. The Agency has thus made some modifications to the standard to ensure that its provisions are practical and effective in communicating hazards to all workers. *Cf. ATMI*, 452 U.S. at 531 n.32 (OSHA may use cost-effectiveness analyses and choose the less costly of two equally effective standards). The inclusion of these "tailoring" provisions is consistent with the Agency's action in tailoring the original HCS to make it practical and cost-effective for all manufacturers. See 29 CFR 1910.1200(b) (3)-(5). Now that the coverage of the standard is being expanded to non-manufacturing employers as well, it is necessary to tailor the standard to the unique characteristics of these non-manufacturing employers. The tailoring provisions, explained in Section II of this preamble, are based on the original record in the HCS rulemaking, and also on Agency experience in implementing the current rule; State plan State experience in implementing expanded versions of the current rule; and comments submitted to the Agency in response to the ANPR published in November 1985. OSHA believes that the knowledge and experience gained during the past few years of implementation and enforcement of the current rule must be taken into consideration when crafting a rule to appropriately apply to the non-manufacturing sector.

The Agency's position is that all employees are entitled to information regarding the chemical hazards they are exposed to in the workplace, and that a uniform Federal hazard communication standard is the best method to ensure that information is provided. This position is consistent with the Act (protecting all employees to the extent feasible), as well as with the Court's decision upon review of the rule. Therefore, this final rule addresses communicating chemical hazards to all exposed employees.

It should be emphasized that in preparing a detailed regulatory impact analysis for the expansion of the scope of the HCS, OSHA has accumulated evidence to indicate that some

employees in every SIC code designation are exposed to hazardous chemicals, and that it is therefore not appropriate to exempt any particular industry sector. For example, OSHA has received suggestions that retail establishments be exempted since employee exposure to chemicals is believed to be unlikely in these types of facilities. However, there is testimony in the original rulemaking record from the United Food and Commercial Workers International Union (Tr. 3088-97) that demonstrates that workers in such facilities are exposed to hazardous chemicals, and therefore do need the protections afforded by coverage under the HCS:

While supermarkets don't use hundreds of hazardous chemicals like some manufacturing industries, a large number of workers are exposed to the dozen or so they do use. Chemicals used include caustic and acid cleaning compounds, solvents, waxes, paints and disinfectants . . . Let me relate to you one case within our union where workers were overexposed to an unidentified substance. A group of supermarket workers began experiencing dizziness, upper respiratory tract irritation and headaches . . . Not until workers started to talk with one another did they start to suspect a possible link between their illness and a certain solvent that was used to remove old price labels from merchandise called *Gumby XC-38*.

See Tr. 3088-89. See also Tr. 414 and Tr. 1840-43. The testimony further relates other incidents, as well as the various activities the union had to pursue to obtain information for exposed workers—including chemical analysis of products to determine their contents. This illustrates the need for application of the standard in industries such as retail stores, as well as those industries where chemical exposures are more obvious. For additional testimony regarding the extent of chemical exposures in the non-manufacturing sector, see, e.g., hospital workers: Tr. 411-14, 2738-41, and 3036 (" . . . hospital workers are exposed to formaldehyde, ethylene oxide, cleaning agents which are often very caustic . . .") (Tr. 411); barbers and beauticians: Tr. 415-16 (" . . . work around hair dyes . . . known to cause cancer . . ."); longshore workers: Tr. 3143; utility workers: Tr. 417, 3078, 3130; workers in dry cleaners and laundries: Tr. 416, 4084-90 (" . . . [B]eyond the chlorinated solvents that your dry cleaners use, some cleaners and laundries also use dyes . . ."); farmworkers: Tr. 2260.

#### *D. Construction Advisory Committee Recommendations*

On June 23, 1987, the Construction Advisory Committee on Occupational

Safety and Health met to discuss a draft proposed standard prepared by OSHA to expand the scope of the HCS to the non-manufacturing industries. The draft proposed rule was very similar to the final standard being promulgated herein. OSHA has reviewed the recommendations of the Construction Advisory Committee, and incorporated a number of the suggested revisions into this document to tailor the rule for the construction industry, and for other industries which have similar concerns due to similar differences in work operations from the typical manufacturing establishment. Other recommendations called for more substantive changes to the HCS, affecting the obligations of chemical manufacturers and others, and OSHA does not believe they are supported by the record or appropriate to incorporate into this final rule without further opportunity for notice and comment from those affected. It is important to note, however, that despite the recommended changes there were no indications that members of the Construction Advisory Committee believe that it is infeasible to implement hazard communication programs in the construction industry. In fact, as OSHA has noted previously, the construction industry has been subject to training requirements concerning chemical hazards for many years (see 29 CFR 1926.21).

In preparing the draft proposed rule, and subsequently this final rule, OSHA did review the *Report on Occupational Health Standards for the Construction Industry* which was submitted by the Construction Advisory Committee to the Assistant Secretary on May 16, 1980. In that report, the Committee addressed recommendations for labels, material safety data sheets, and training—all of the major components of the HCS.

Of particular concern to the Committee at that time was that construction employers do not have access to the necessary information upon which to develop appropriate signs and labels or material safety data sheets, and therefore must depend upon suppliers for such information. "[C]onstruction employers may not always be aware of the hazard associated with a particular product or device if the items are not accompanied upon purchase by appropriate labels and data sheets. . . ." OSHA agrees that this lack of information has been a problem for all downstream users of chemicals, and thus developed the approach incorporated into the HCS—producers or importers of chemicals are responsible for evaluating the hazards

and transmitting that information to downstream employers or users of the materials. Under the expanded rule, construction employers would be the recipients in this downstream flow of information.

The HCS did not exist at the time of the report, and the Committee thus recommended that a solution to the problem of lack of information "would be to modify and extend the existing OSHA standard for material safety data sheets which now applies only to ship repairing, shipbuilding, and ship breaking (29 CFR 1915, 1916 and 1917). The modified standard would require manufacturers or formulators of harmful materials or agents to supply material safety data sheets along with their products in such a fashion that they reach construction employers." Shipbuilding and ship repairing are in the manufacturing sector, and covered by the requirements of the 1983 final rule—ship breaking will be covered by these expanded provisions. Therefore, OSHA is doing what was recommended in 1980, i.e., extending the existing OSHA standard for material safety data sheets to construction. The Advisory Committee concluded that although the hazard information may have been difficult for construction employers to acquire in the past, "such information was fundamental to the preparation of warning signs, labels, training programs, and other important job safety and health activities."

The Construction Advisory Committee is now recommending that the construction industry be regulated under a separate standard for Hazard Communication, rather than being treated as any other downstream employer who uses chemicals. The rationale is that construction sites are unique among industrial workplaces and should be addressed in a vertical standard specific to the industry. Although OSHA has found this argument persuasive for a few health standards, where there are fundamental differences in control strategies to achieve permissible exposures for a chemical in a fixed site facility versus the construction site, it does not appear to be appropriate in this situation which simply involves transmittal of information, that can be accomplished on any type of site. Arguments regarding transient workers, mobile work sites, etc. can appropriately be made for other non-manufacturing users of chemicals as well. The problems raised can be dealt with more effectively by modifying the provisions of the current rule to address them, rather than preparing completely separate standards for each industry.

It was interesting to note that although the Construction Advisory Committee was essentially maintaining that hazard communication in construction could be treated as a separate issue, many of the changes the members were recommending would often have required substantive changes in the requirements for the manufacturing sector. As noted above, the Committee expects to receive labels on containers and material safety data sheets from its suppliers. This is certainly consistent with OSHA's approach in the rule. But the Committee is also recommending that the labels on containers being shipped to construction contain additional information, and that the requirements for material safety data sheets be slightly different as well. They also recommended changes in the hazard determination provisions, while maintaining that hazard determinations must be accomplished in the manufacturing sector. These recommendations serve to support OSHA's view that in an approach which requires a downstream flow of information, the relationship between the requirements for producers and downstream users are so interdependent that separation of them into two separate standards would be logically inconsistent. And furthermore, since the requirements for hazard determinations, labels, and material safety data sheets were based on an extensive rulemaking record, and are not industry-specific, it would not be appropriate to modify those requirements at this point.

Two separate standards would also require cross-referencing provisions from one rule to another to ensure proper information transmittal, a regulatory format which would be unnecessarily confusing to the regulated community. OSHA believes it is more effective to list, in one standard, the obligations of chemical producers, importers, and suppliers with those of the users so that employers using hazardous chemicals will be aware of the content and quality of the hazard information they are entitled to receive from their suppliers. Furthermore, it would not be appropriate to indicate requirements for chemical manufacturers and importers in a standard which purports to cover solely the construction industry, as would have to be done to accommodate all of the recommendations of the Committee. Therefore, construction employers are included with all other employers in this standard. However, OSHA will print the rule in full in 29 CFR Part 1926 (in § 1926.59) for ease of reference for

construction employers and employees. In addition, it will also be printed in 29 CFR Parts 1915, 1917, and 1918, for the use of maritime employers and employees (at new § 1915.99, 1917.28, and 1918.90, respectively), and will be referenced in Part 1928 covering agricultural employments.

#### *E. Federal Community Right-to-Know Law*

Expansion of OSHA's HCS will also have an impact on employers' obligations under another Federal law to inform State and local communities of the hazardous chemicals present in the workplace. On October 17, 1986, the President signed into law the Superfund Amendments and Reauthorization Act of 1986 ("SARA"). Part of the new law, Title III, the Emergency Planning and Community Right-to-Know Act of 1986, encourages and supports emergency planning efforts at the State and local level and provides citizens and local governments with information concerning potential chemical hazards present in their communities.

Two provisions in the new law, sections 311 and 312, mandate that employers required under the Occupational Safety and Health Act of 1970 and regulations under that Act to prepare or have available material safety data sheets for hazardous chemicals in their workplaces, must also submit chemical hazard information to State and local governments. Specifically, employers required by the OSHA HCS to create or maintain material safety data sheets for employees must also submit to the State emergency response commissions, the local emergency planning committee and the local fire department: (1) A material safety data sheet for each hazardous chemical for which a data sheet is available (section 311); and (2) an emergency and hazardous chemical inventory form (section 312). The public may request material safety data sheets and inventory information from the local planning committee.

Because all manufacturing employers are currently subject to the OSHA HCS and required to create or maintain data sheets for the hazardous chemicals present in their workplaces, they must also comply with the community reporting requirements of the Emergency Planning and Community Right-to-Know Act. An expanded HCS covering non-manufacturers will require non-manufacturers to provide chemical hazard information not only to their employees but also to the surrounding communities.



themselves from these hazards when there is a spill or leak. The training must also address the availability and use of substance-specific information found on labels and material safety data sheets, where available. These requirements should provide employees handling only sealed containers of chemicals with the information they need.

This limited provision also addresses some of the concerns raised by representatives of industries with these types of workplaces. (See, e.g. Exs. 2-53, 2-75, 2-201, and 2-214). Although they generally were arguing that this type of operation warrants exclusion from the rule, OSHA does not agree that no protection under the HCS is required in these situations. As already described, a potential for exposure does exist, and therefore such employees must be appropriately covered. OSHA believes the limited coverage described will effectively protect employees while recognizing the constraints of the particular work operations involved with regard to the applicability of the current rule to these types of work.

**Labeling exemptions.** The HCS includes a number of labeling exemptions to ensure that OSHA does not provide duplicative coverage for products which are already labeled under the rules of another Federal agency. It should be reemphasized that these exemptions (in paragraph (b)(4) of the original rule; paragraph (b)(5) in this final rule) are only from the container labeling requirements under paragraph (f)—all other provisions of the rule are still in effect. A minor correction is being made, however, to these exemptions to indicate that when medical or veterinary devices are labeled in accordance with the labeling requirements of the Food and Drug Administration (FDA) under authority of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 *et seq.*), those items are exempted from HCS labeling requirements. All other items regulated by FDA under that Act were listed in the HCS labeling exemption. Medical and veterinary devices were inadvertently omitted from the list of items that might be subject to FDA labeling requirements under the Federal Food, Drug, and Cosmetic Act, and they are exempted from HCS labels for the same reasons that the other items are exempt when subject to labeling under FDA. See 48 FR 53289. To ensure that all these FDA regulated items are treated in the same manner and that devices are exempted from HCS labeling if subject to FDA labeling, paragraph (b)(5)(ii) is amended by adding medical and veterinary devices.

**Other exemptions.** The HCS includes a number of specific, total exemptions from the requirements of the rule for certain types of chemicals. This rule adds three categories of exemptions: food, drugs, cosmetics, or alcoholic beverages in a retail establishment packaged for retail sale (paragraph (b)(6)(vi)); consumer products (paragraph (b)(6)(vii)); and certain pharmaceuticals (paragraph (b)(6)(viii)).

**Food, drugs, cosmetics, alcoholic beverages.** The current HCS includes an exemption for food, drugs, or cosmetics brought into the workplace for employee consumption. These types of exposures are not related to an employee's work, and therefore do not need to be covered under the HCS.

The expansion of the HCS into the non-manufacturing sector will result in many of these types of products being present in workplaces (e.g., liquor stores) where they are not intended for employee consumption, and where they normally would not result in employee exposure because they are packaged for sale to consumers. Although some of these products may meet the definition of a "hazardous chemical" (e.g., vinegar is acetic acid), when packaged for retail sale they do not pose a hazard to workers that is any different than the hazards of such products in their homes. The label information required by other Federal agencies for foods, drugs, cosmetics, and alcoholic beverages should thus provide sufficient protection for workers, and OSHA has exempted these products from coverage under the rule. It should be noted that this is not an exemption for facilities of any particular industry, as all facilities may have other chemicals in use that would be covered by the HCS. In addition, since these products are exempted, employers which package them for retail sale would not have to furnish material safety data sheets to distributors receiving the products.

**Consumer products.** The current rule provides a labeling exemption for consumer products when they are labeled in accordance with the requirements of the Consumer Product Safety Commission (CPSC). CPSC requires consumer products which contain hazardous substances to be appropriately labeled. Examples of consumer products would include such items as oven cleaner, paint stripper, and adhesive, which may be found in various types of workplaces. In addition to the specific labeling exemption, OSHA has been interpreting the rule as not being applicable to consumer products when used as a consumer would use them. OSHA is now adding

this interpretation to the rule itself, paragraph (b)(6)(vi), stating that where such consumer products are used in the workplace in a manner comparable to normal conditions of consumer use, resulting in a duration and frequency of exposure to employees which is no greater than exposures experienced by ordinary consumers, under such conditions the chemical would not have to be included in the employer's hazard communication program. This position is consistent with OSHA's reason for originally limiting the exemption for hazardous consumer products used in the course of employment to only an exemption from HCS labeling, and not material safety data sheet and training requirements. "OSHA recognizes . . . that there may be situations where worker exposure is significantly greater than that of consumers, and that under these circumstances, substances which are safe for contemplated consumer use may pose unique hazards in the workplace." 48 FR 53289. However, to the extent that workers are exposed to the substances in a manner similar to that of the general public, there is no need for any HCS requirements.

One example of such a differentiation in exposure situations involves the use of abrasive cleaners in the workplace. Where these are used intermittently to clean a sink, much as they would be used at home, the cleaners would not be covered under the standard. But if they are used to clean out reactor vessels, thus resulting in a much greater level of exposure, they would be covered. Or if an employee cleans sinks all day long, thus resulting in more frequent exposures, the abrasive would also be included in the hazard communication program. Thus workplaces which only have chemicals which are consumer products used in the same way and as frequently as the general public would normally use them, would not have to have a hazard communication program.

It should be noted that OSHA intends to read this exemption narrowly. Where an employer is uncertain whether the duration and frequency of exposure to these products is comparable to consumer use, an employer should obtain or develop the material safety data sheet and make it available to employees.

In response to questions raised in the 1985 ANPR, OSHA received a few comments on the use of consumer products in the non-manufacturing sector. A number indicated that overexposure may occur from the use of such products, or that the frequency and duration of workplace exposure is typically greater than that experienced

offices

by consumers (Exs. 2-59, 2-83, 2-100, 2-120, and 2-164). Others stated that the exposure was comparable to consumer use (Exs. 2-46 and 2-63). There were several that felt the label provided enough information, and no additional requirements were needed to protect employees (Exs. 2-75, 2-79, 2-99, 2-107, and 2-116), while others felt the employer should be required to request material safety data sheets because employees are not getting enough information (Exs. 2-109, 2-128, and 2-169). One suggested that the label note that a material safety data sheet is available on request (Ex. 2-100), while another contended that when a product is used by a professional, it is no longer a consumer product (Ex. 2-199). OSHA believes that the consumer product exemption in this final rule takes all of these concerns into consideration, and strikes a balance between the practical considerations of acquiring and maintaining material safety data sheets on CPSC regulated products which employees are exposed to at home as well as at work, and the worker's need for more hazard information than a CPSC label when exposures are greater or more frequent than typical public use of the chemical would generate.

A number of States adopting right-to-work laws have also developed consumer product exemptions. (See, e.g., Wisconsin "Employees' Right to Know Law"; Illinois "Toxic Substances Disclosure to Employees Act.") However, most of these rules have taken a broader approach to the consumer product exemption, generally eliminating coverage of such products unless exposure is "significantly greater" than consumer exposure during the "principal consumer use." OSHA considered and rejected such language for the consumer product exemption. It would be very difficult from an enforcement perspective to determine when exposure to a consumer product is "significantly greater" than consumer exposure. The key elements of concern to OSHA are as stated in the consumer product exemption included in this rule—that the consumer product be used in the same manner as a consumer would use it (and therefore as intended by the manufacturer when preparing the label information), and that the duration and frequency of exposure be essentially the same as would be experienced by a consumer (and thus the label warnings would provide adequate protection.) A broader exemption than this would not be appropriate to protect workers from occupational exposures that were not anticipated by the manufacturer when

the labels, and thus the protective measures, were developed.

Application to Office Products. A number of questions have been raised about the application of the rule to office products that may contain hazardous chemicals. It is OSHA's definition that office products such as pencils, pens, typewriter ribbons, and the like, are "articles" under the rule and therefore exempted, paragraph (b)(6)(iv). Employers are not therefore required to implement a program for such products. OSHA has also determined that intermittent, occasional use of a copying machine to make copies is not covered by the rule. The copying machine would also be considered an article for purposes of this standard. However, if a firm has a copying machine operator who is responsible for handling the chemicals associated with its use, or who operates the machine frequently, that individual would be entitled to information under the rule.

Medicine. The rule, paragraph (b)(6)(vii), also includes an exemption for drugs when they are solid, and are in final form for direct administration to the patient (i.e., pills or tablets). Employees handling such finished drug products would not be exposed to the chemicals involved, and would not need information other than that supplied on the container label under FDA requirements. (The State of North Carolina adopted a similar exemption in their Hazard Communication Standard, 13 NCAC 57C.101(a)(99)).

Wood dust. As OSHA has received a number of questions regarding the application of the wood and wood products exemption to wood dust, OSHA would like to reiterate its interpretation regarding the wood and wood product exemption in paragraph (b)(6)(iii) of this final rule. The wood and wood products exemption was included in the HCS for two reasons. First, the presence and identity of wood and wood products in the workplace is "unmistakable" and second, their hazards (i.e., flammability or combustibility) are well-known to workers. 48 FR 53289. Because wood and wood products, characteristic hazards are self-evident, regulations requiring formal notification were not thought to be necessary. Wood and wood products "are not expected to be hazardous for purposes of this standard." *Id.* at 53335. OSHA never intended, however, that wood dust be excluded from the standard's coverage under the wood and wood products exemption. Wood dust is not generally a wood "product," but is created as a byproduct during manufacturing

operations involving sawing, sanding, and shaping of wood. Wood dust does not share solid wood products' "self-evident" hazard characteristics that supported the exemption of wood products from the HCS' coverage. Except for the chemical additives present in the wood, products such as lumber, plywood, and paper are easily recognizable in the workplace and pose a risk of fire that is obvious and well-known to the employees working with them. The potential for exposure to wood dust within the workplace, especially with regard to respirable particles, is not self-evident, nor are its hazards through inhalation so well-known that hazard communication programs are unnecessary.

"Wood dust" is a recognized health hazard, with exposure limits recommended by the American Conference of Governmental Industrial Hygienists (ACGIH) to control employee exposures to the substance. Under the provisions of the HCS, this means that wood dust is to be considered a hazardous chemical (paragraph (d)(3)(ii)), and therefore subject to the requirements of the rule including material safety data sheets and training.

#### (c) Definitions

The only changes to the definitions in the current HCS are those that need to be made to accomplish the expansion of the HCS.

The reference to SIC Codes 20 through 39 is being deleted from the definition of "chemical manufacturer" to be consistent with the extent scope of the rule. Any employer who produces a hazardous chemical for "use or distribution" is considered a "chemical manufacturer" under the HCS, and must prepare and provide the appropriate hazard information.

OSHA has modified the definition of "container" to exempt "engines, fuel tanks, or other operating systems in a vehicle." The Agency has received some questions regarding the need for labeling such parts of a vehicle in applying the rule to the manufacturing sector. Expansion into non-manufacturing will greatly increase the number of vehicles involved in work operations, and thus OSHA determined that this clarification will ensure that the Agency's position regarding this issue is clear—vehicles do not have to bear labels regarding hazardous chemicals used to operate them. This does not exempt such chemicals from coverage by the rule—it simply eliminates the need to label once they are placed into the vehicle.

The definition of "distributor" has also been changed to reflect the



extended scope of the rule. A "distributor" means "a business, other than a chemical manufacturer or importer, which supplies hazardous chemicals to other distributors or to employers." Among other things, distributors must transmit hazard information they receive from chemical manufacturers and importers to all their employer customers.

Under the current rule, OSHA defined "employee" as someone working in the manufacturing sector, and stated that those employees in manufacturing whose jobs did not involve routine potential exposure to hazardous chemicals would not generally be covered by the rule. Examples related to the manufacturing sector were provided. This was intended to limit the coverage primarily to those employees in the industry who were actually involved in production operations. However, since the scope of the entire standard is being expanded to cover employees in all types of work operations, the definition has been modified to clarify that workers who are exposed to hazardous chemicals as part of their assigned jobs would generally be covered under the rule, except for those who only encounter hazardous chemicals in non-routine, isolated instances. OSHA believes most office workers, and many other workers, are not exposed to the hazardous chemicals covered by the HCS in such a way that the rule would apply to those types of work operations. The rule, therefore, simply defines a covered "employee" as any "worker who is exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies" and further states that "workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered." "Normal operating conditions" are those which employees encounter in performing their job duties in their assigned work areas. For example, if the receptionist in a facility receives and delivers a telephone message for someone in a different work area where hazardous chemicals are present, this does not mean that the receptionist would be covered under the rule by virtue of the one potential exposure from delivering the message. However, if performance of the receptionist's job entails walking through the production area every day, and thus being potentially exposed during the performance of regular duties, that job would be covered under the rule.

The definitions of "employer" and "importer" are also amended to indicate

that all employers are covered by the standard. In addition, the definition of "employer" is amended to indicate that the term includes contractors and subcontractors. This reflects the definition of employer used in OSHA's construction standards. Similarly, the definition of "workplace" has been modified to specifically include job sites and projects.

**Hazard warning.** While OSHA is not modifying the definition of "hazard warning" contained in the current rule, the Agency wishes to reiterate the intent to help employers better understand and comply with the requirements. "Hazard warning" means "any words, pictures, symbols, or combination thereof which convey the hazard(s) of the chemical(s) in the container(s)." "Appropriate hazard warnings" are to be put on container labels. (See final rule paragraphs (f)(1)(ii) and (f)(5)(ii)). Since the rule covers "physical" and "health" hazards, specific information regarding these would be required on a label to comply.

Many labels at the time the HCS was promulgated includes only precautionary statements, rather than providing necessary information about the specific hazards of the chemicals. Thus employees encountered statements such as "avoid inhalation" on virtually every chemical container, but were not provided with statements regarding what type or severity of effect inhalation could be expected to produce.

Therefore, OSHA's standard requires identity and hazard information on labels. Although employers can choose to provide additional statements, OSHA's requirements are limited to that required to convey the hazards to the workers. Under the OSHA scheme, other data regarding protective measures, first aid, etc., are to be included on the material safety data sheet or in training, rather than appearing on the label itself. This approach is in keeping with the Agency's evaluation of available data on effectiveness of labels which indicates that the more detail there is on a label, the less likely it is that employees will read and act on the information. The purpose of the label is to serve as an immediate visual warning of the chemical hazards in the workplace. (See generally, 48 FR 53300-03).

There have been misinterpretations of the requirements made based on statements in the preamble to the current rule concerning various labeling systems (see 48 FR 53301). This preamble discussion involves format of labels, and is not an unqualified

endorsement of any particular labeling system. It simply states that any format may be used, as long as the label includes the information regarding the chemical hazards required by the standard. It should be noted that it can be expected that some labels prepared in accordance with any of the available labeling systems can be expected to be found to be deficient. Again, the preamble discussion cited merely reemphasized that employers are not constrained to use any particular format or wording, but are constrained by the necessity to comply with the requirements of the rule concerning the information to be provided—the identity, the hazards, and for containers leaving the workplace, the name and address of the responsible party.

The terms "physical" and "health" hazards are already defined in the rule, and these are the specific hazards that are to be "conveyed" in an "appropriate" hazard warning. There are some situations where the specific target organ effect is not known. Where this is the case, a more general warning statement would be permitted. For example, if the only information available is an LC<sub>50</sub> test result, "harmful if inhaled" may be the only type of statement supported by the data and thus may be appropriate.

It will not necessarily be "appropriate" to warn on the label about every hazard listed in the MSDS. 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. This does not mean, however, that only acute hazards are to be covered on the label, or that well-substantiated hazards can be omitted from the label because they appear on the data sheet.

It may be "appropriate" to provide less detailed information on the chemical hazards in an in-plant labeling system where MSDSs and training are readily available, than on a label placed on a container leaving the workplace, where it may provide the only hazard information in certain situations and where there is no guarantee that the downstream employees handling or using the chemical will fully understand the less detailed label. This difference in appropriateness allows employers to establish standardized in-plant labeling systems, as long as training regarding the use of these systems is conducted, and MSDSs provide the required, detailed information.

*Article.* OSHA is not modifying the definition of "article" but would like to provide some clarification regarding the Agency's interpretation. Releases of very small quantities of chemicals are not considered to be covered by the rule. So if a few molecules or a trace amount are released, the item is still an article and therefore exempted. In an earlier discussion in this preamble, application of the rule to office products was discussed and it was stated that items such as pens or pencils are to be considered articles. Other examples would be: emissions from tires when in use; emissions from toner on pieces of paper; or emissions from newly varnished furniture.

Furthermore, it should be reiterated that the HCS is limited to hazardous chemicals "known to be present" (paragraph (b)(2)), and does not require any chemical analysis or testing to determine or verify such presence. See 48 FR 53334-35. Thus although one may assume that molecules are being emitted from an item, under the standard one does not "know" that a particular hazardous chemical is "present."

The article exemption applies solely to the ultimate end use—intermediate users which result in exposure are covered and require hazard information to be provided. The following are examples of items which would require information for intermediate use prior to being finally installed: encapsulated asbestos insulation where the normal installation involves hammering the material into openings, thus releasing the asbestos; tiles to be placed on a ship's hull which contain lead that is released during installation; and glass mercury switches to be installed in equipment, a percentage of which are expected to break during this installation process. In these cases, installation is the "normal condition of use" for the employees installing the items, and thus hazard information is required for these intermediate uses. Once installed, these items would be articles and thus exempted.

Although installation of an item may render the exemption temporarily void (until the item is installed, information must still be provided if there is a potential for exposure), OSHA does not believe that the possibility that exposure could occur when the item is repaired or worked on need be considered in the determination of when information must be transmitted downstream. Employers of employees performing repairs must provide the best information they have concerning the potential exposures. There would be no way to ensure, for example, that a material safety data

sheet prepared for a lead pipe would be available to a worker repairing the pipe some years following installation. The employer would provide the employees with general information concerning the hazards of the operations they were performing in lieu of specific information on the pipe itself.

#### (d) Hazard Determination

OSHA is not modifying the current rule's hazard determination requirements. The burden of evaluating chemicals to determine whether they are hazardous remains on the chemical manufacturers and importers who produce or import them and on those user employers who choose not to rely on the evaluations made by their suppliers and instead evaluate the chemicals themselves. A detailed explanation of these provisions can be found at 48 FR 53296-99, 53335-36.

#### (e) Written Hazard Communication Program

Under the current rule, a written hazard communication program must be developed and implemented for each workplace. Since the current rule covers fixed manufacturing sites, it did not appear to be necessary to specifically state that the written program be available at the site. With expansion to non-manufacturing, however, particularly in the construction industry where a firm may have multiple sites, the standard must be tailored to specifically state that the intent is to maintain the written program at each site. Employees will then be able to access the information as required.

The current written hazard communication program requirements include a provision that requires manufacturing employers to provide hazard information to on-site contractor employers who have employees who may be exposed to the hazards generated by the manufacturer (current paragraph (e)(1)(iii)). The current standard does not address the reverse situation, i.e., where a contractor employer brings hazardous materials on-site, and exposes the manufacturer's employees to them. Since the expanded rule will affect more worksites with work arrangements of this type (e.g., construction), and the need for an exchange of hazard information is obvious, OSHA has revised the requirements to tailor it to address the multi-employer workplace. (This was suggested in comments submitted in response to the ANPR. See Ex. 2-225, comments from the National Constructors Association. In addition, this situation has also been addressed in existing State right-to-know laws. See,

e.g., Alabama Act 85-458; Tennessee "Hazardous Chemical Right to Know Law.")

Under these provisions (paragraph (e)(2)), the employers must exchange material safety data sheets, as well as information about precautionary measures necessary to protect employees and an indication of the type of labeling system in use, where exposures may occur to another employer's employees. Each employer will then have the information necessary to inform and train their employees. This will help ensure that all employees have sufficient information to protect themselves in the workplace, regardless of which employer uses the hazardous chemical.

Consistent with the performance-orientation of the rule, the provisions do not specify how this coordination is to be accomplished. This is best left to the discretion of the parties involved. In many cases, it would probably be most efficient for the general contractor to coordinate the function. For example, the general contractor could keep and make available material safety data sheets in the office on the site.

It should be emphasized that the exchange of information is limited to those situations where exposures of other employers' employees may occur. Given the nature of multi-employer work sites in construction, there would be many situations where subcontractors responsible for various phases of the building project would not have employees present during other phases and thus no such exchange would be required. For example, if the electricians are not working near, or at the same time as, the paving contractor, then no interchange is required. But if a painting contractor's workers are using flammable solvents in an area where another subcontractor is welding pipes, this information exchange is vital to ensure proper protection of employees.

#### (f) Labels and Other Forms of Warning

A tailoring provision has been added concerning shipments which consist of solid metal. OSHA considers this change to be necessary since the problem addressed will occur more frequently in shipments to the nonmanufacturing sector than has been the case in the manufacturing sector. (Paragraph (f)(2)). Solid metal is often considered to be an "article" under the rule, and thus exempt. Where the metal is not an "article" since its downstream use results in hazardous chemical exposure to employees working with it, a provision has been added which allows shippers of this type of material

to send the label information once, similar to material safety data sheet transmittal, as long as the material is the same and it is being shipped to the same customer. In these situations, there should be no hazard to anyone handling the metal from the time it is produced in solid form, until the time someone works on it in a way that releases a chemical hazard. Since the label information transmitted would only reflect the chemical hazards released when it is later worked on, the label would not provide any hazard information that is needed by those handling the material in transit. It must be emphasized that this exception is only for the solid metal itself—any hazardous chemicals present in conjunction with the metal in such a form that employees may be exposed when handling the material (e.g., cutting fluids, lubricants, and greases), require labels with each shipment. This tailoring provision, therefore, does not diminish worker protection—workers get the hazard information they need.

#### (g) Material Safety Data Sheets

Under the hazard determination provisions, a requirement is included which indicates that there are situations where the percentage cut-off for mixtures would not apply—when the released chemical is particularly hazardous, or when it could exceed an established permissible exposure limit or Threshold Limit Value when released (paragraph (d)(5)(iv)). Although this is clearly a requirement of the rule, see also 48 FR 53336, the material safety data sheet provisions for disclosure of hazardous ingredient identities did not address that particular situation. Clearly it was OSHA's intent to have all hazardous ingredients of mixtures listed on a material safety data sheet, even those in very small concentrations, when the hazard determination provisions of paragraph (d) mandate that they are to be considered hazardous for purposes of the HCS. As noted in the HCS preamble discussion of the material safety data sheet provisions: "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." *Id.* at 53337. This obvious oversight has been corrected by a minor amendment to the rule. Paragraph (g)(2)(i)(C)(2).

Another situation which raises practicality concerns because of the expansion of the scope of the rule involves employers who purchase hazardous chemicals from local retail distributors, rather than directly from the chemical manufacturer or importer,

or from wholesale distributors as is more commonly done in the manufacturing sector. Under the current HCS, distributors of hazardous chemicals must automatically provide commercial customers material safety data sheets (paragraph (g)(7)). Retail distributors, however, often sell to businesses and the general public and frequently have no way of knowing who a particular purchaser is. Under the current rule, retail distributors might have to give material safety data sheets to each customer to ensure that commercial customers get the information they need under the HCS. A specific statement regarding retail distributors is, therefore, included in paragraph (g)(7) to address this practical problem. Those retail distributors who sell hazardous chemicals to employers must provide a material safety data sheet upon request, and must post a sign or otherwise inform the employers that an MSDS is available. According to Schneider Hardware of Banksville, Inc., this is a reasonable approach (Ex. 2-179):

If OSHA does require commercial customers to get information through a retail outlet, I do not foresee any problems with that arrangement. The manufacturers could supply us with the information, as they are required to now for shipments to manufacturing plants, and we could make it available to customers upon request. We would merely keep the sheets in a file drawer and post a sign informing customers of their availability. We have less than 100 chemicals that would probably be affected, and keeping information on those would require at most, one file drawer. It would not be burdensome.

The retail distributors likely affected are those selling building supplies, hardware, etc. Retail distributors will have to assess their product lines, and whether or not they have commercial accounts, to determine whether they must comply with this provision. It is clear that most other types of retail establishments (e.g., grocery stores, clothing stores, etc.) would not.

With regard to the maintenance of material safety data sheets so that they are readily available to employees, whereas manufacturing facilities are generally fixed work sites with fixed locations for these materials, in some types of nonmanufacturing work operations, employees must travel between work areas during a workshift. For example, employees involved in servicing oil and gas wells may have a central office location, but then travel by truck to the wells to perform their work. These remote locations may not have any staff, or may not have an office facility. OSHA has added a provision to the MSDS requirements to allow MSDSs

to be kept at a central location in this type of situation, as long as the employer ensures that the employees can immediately obtain the information in an emergency, paragraph (g)(9). OSHA believes that this provision tailors the HCS so that it remains practical, yet effective, in getting workers the hazard information they need. This was also supported by a number of ANPR commenters (see, e.g., Exs. 2-83, 2-107, 2-114, 2-116, and 2-117).

The current rule, as well as the expanded standard, allows downstream employers to rely on upstream chemical manufacturers and importers to provide MSDSs. However, there is a duty for downstream users to request an MSDS when they don't receive one at the time of the first shipment. There have been some questions regarding how the downstream user will know a data sheet is required without doing a hazard evaluation. Such an evaluation is not necessary. If the label indicates a hazard, the employer will know he needs a data sheet and must request one if it is not received. If there are no hazards on the label, the downstream user can assume the product is not hazardous and a data sheet is not required.

#### (h) Employee Information and Training

OSHA is not making any modifications to the current rule's information and training provisions. These requirements remain performance-oriented and designed so that each employer will adequately address the hazards posed by chemicals in the workplace. An explanation of these provisions can be found at 48 FR 53310-12, 53337-38.

One question that does arise regarding training is whether it needs to be done specifically on each chemical, or whether employers can train regarding categories of hazards. Either method would be acceptable. See 48 FR 53312, 53338. If employees are exposed to a small number of chemicals, the employer may wish to discuss the particular hazards of each one. Where there are large numbers of chemicals, the training regarding hazards could be done on categories (e.g., flammable liquids; carcinogens), with employees being referred to substance-specific information on the labels and MSDSs. Similarly, the re-training occurs when the hazard changes, not just when a new chemical is introduced into the workplace. If the new chemical has hazards which employees have been trained about, no re-training occurs. If the chemical has a hazard they have not



been trained about, re-training would be limited to that hazard.

#### (i) Trade Secrets

Paragraph (i)(11) of the current rule states that "[i]f, 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. . . ." This provision was worded in such a manner that it left the impression that OSHA could refer the matter to the Review Commission. This is incorrect as a matter of law. An enforcement proceeding is referred to the Review Commission when a citation is issued by OSHA, and is subsequently contested by the employer receiving the citation. Therefore, OSHA has made a technical amendment to paragraph (i)(11) to reflect the applicable procedural law.

#### (j) Effective Dates

The expansion of the rule to cover all employers becomes effective nine months from the date of promulgation of the final standard. Since the chemical hazard information for labels and material safety data sheets has already been generated in the manufacturing sector, and in many cases has also been distributed in non-manufacturing due to State law requirements and voluntary transmittal by suppliers, one month should be sufficient time for chemical manufacturers, importers, and distributors to initiate provision of material safety data sheets to other distributors and to customers in the non-manufacturing sector. An additional eight months is being provided for non-manufacturers to complete preparation of a written hazard communication program for each facility and to conduct employee training. It should be noted that this eight month period for compliance only applies to those employers which are newly covered under the expanded provisions—employers in SIC Codes 20 through 39 are covered under the current HCS and are already required to be in compliance with the provisions of that rule. Those tailoring provisions that apply to manufacturing workplaces, such as the consumer product exemption, go into effect immediately for those facilities.

#### Appendices A and B

OSHA is not amending Appendix A's discussion of the health hazards posed by chemicals, or Appendix B's discussion of hazard determination. They remain applicable to all chemical manufacturers, importers, and

employers performing hazard determinations.

#### Appendix C

The reference sources listed in this non-mandatory appendix have been updated to reflect currently available sources.

#### Appendix D

The recent rulemaking on trade secrets added a new Appendix D regarding the evaluation of the validity of trade secret claims. 51 FR 34590. The full text of this appendix has been reprinted in this document as well.

### III. Analyses of Regulatory Impact, Regulatory Flexibility, and Environmental Impact

The following is a summary of the regulatory impact and regulatory flexibility analysis prepared by OSHA for the revision of the Hazard Communication Standard which extends the scope of the existing standard to the nonmanufacturing sector. The full text of the document may be examined and copied in OSHA's Docket Office, 200 Constitution Avenue, NW., Room N3670, Washington, DC 20210; telephone (202) 523-7894.

#### Economic Analysis

As part of OSHA's efforts to gather information concerning the economic feasibility of extending the coverage of the HCS to include workplaces in the nonmanufacturing sector, the JACA Corporation performed a study examining the benefits, costs, and overall economic impact of such a revision. This report was used as the basis for the regulatory impact analysis prepared by OSHA.

The analysis reflects the extent to which employers in the nonmanufacturing sector are currently subject to state right-to-know laws and are voluntarily implementing their own hazard communication programs. The analysis also takes into account OSHA's existing policy regarding the use of consumer products and training requirements already imposed on employers by other OSHA standards. With respect to consumer products covered by the HCS, OSHA Instruction CPL 2-2.38A ("Inspection Procedures for the Hazard Communication Standard, 29 CFR 1910.1200") states:

A common sense approach must be employed whenever a product is used in a manner similar to which it could be used by a consumer, thus resulting in levels of exposure comparable to consumer exposure. The frequency and duration of use should be considered. For example, it may not be necessary to have a data sheet for a can of

cleanser used to clean the sink in an employee restroom. However, if such cleanser is used in large quantities to clean process equipment, it should be addressed in the Hazard Communication Program.

This policy has been incorporated into the revisions to the HCS, and was taken into account when evaluating data describing the number of hazardous chemicals in the various two-digit SIC groups that could be affected by extension of the HCS to the nonmanufacturing sector.

Assessing the net impact of the training provisions required identifying and deducting the costs of existing OSHA standards which already require employers to provide the types of information and training activities prescribed in the HCS. This was done for construction (§ 1926.21), shipbreaking (§ 1915.97), marine terminals (§ 1917.22), and longshoring (§ 1918.86). However, it was not possible to separately identify and deduct the existing training costs for substance-specific standards that currently apply to the nonmanufacturing sector. Thus, the compliance costs presented in this analysis are somewhat overstated.

In extending the rule for manufacturing to the nonmanufacturing sector, OSHA has made revisions to reflect unique aspects of some work operations. For example, the standard allows MSDSs to be maintained at central locations in circumstances where employees must travel between work operations during a workshift, provided that the information can be obtained immediately in an emergency. This provision is expected to lower costs in SIC groups 07, 08, 09, 13, 46, 49, and 73. (See Table 1 for a description of the SICs.)

The standard also allows for limited coverage in those work situations where employees handle chemicals in sealed containers that are not opened under normal conditions of use, and thus have little potential for measurable exposures. Employers would be required to leave warning labels on containers, and make available any MSDSs received with the containers. Employers would also have to be trained in accordance with the standard, with particular emphasis on procedures to follow if there is a spill or leak of the hazardous chemicals in the normally sealed containers. Affected establishments would not have to make special efforts to obtain and keep MSDSs that are not received with the chemicals, and no written plan for complying with the HCS would be required. This provision is expected to

result in lower costs in SIC groups 42, 44, 45, 47, 51, and 52.

Thus the changes made to establish more appropriate provisions for unique work situations should result in lower costs than would be experienced if the HCS for manufacturing were extended to the nonmanufacturing sector without revision.

**Table 1.—SIC Groups Covered in the OSHA Analysis**

**Division A. Agriculture, Forestry, and Fishing**

- Major Group 01. Agricultural production—crops
- Major Group 02. Agricultural production—livestock
- Major Group 07. Agricultural services
- Major Group 08. Forestry
- Major Group 09. Fishing, hunting, and trapping

**Division B. Mining**

- Major Group 13. Oil and gas extraction

**Division C. Construction**

- Major Group 15. Building construction—general contractors and operative builders
- Major Group 16. Construction other than building construction—general contractors
- Major Group 17. Construction—special trade contractors

**Division E. Transportation, Communication, Electric, Gas, and Sanitary Services**

- Major Group 40. Railroad transportation
- Major Group 41. Local and suburban transit and interurban highway passenger transportation
- Major Group 42. Motor freight transportation and warehousing
- Major Group 44. Water transportation
- Major Group 45. Transportation by air
- Major Group 46. Pipe lines, except natural gas
- Major Group 47. Transportation services
- Major Group 48. Communication
- Major Group 49. Electric, gas, and sanitary services

**Division F. Wholesale Trade**

- Major Group 50. Wholesale trade—durable goods
- Major Group 51. Wholesale trade—nondurable goods

**Division G. Retail Trade**

- Major Group 52. Building materials, hardware, garden supply, and mobile home dealers
- Major Group 53. General merchandise stores
- Major Group 54. Food stores
- Major Group 55. Automotive dealers and gasoline service stations
- Major Group 56. Apparel and accessory stores
- Major Group 57. Furniture, home furnishing, and equipment stores
- Major Group 58. Eating and drinking places
- Major Group 59. Miscellaneous retail

**Division H. Finance, Insurance, and Real Estate**

- Major Group 60. Banking
- Major Group 61. Credit agencies other than banks

- Major Group 62. Security and commodity brokers, dealers, exchanges, and services
- Major Group 63. Insurance
- Major Group 64. Insurance agents, brokers, and service
- Major Group 65. Real estate
- Major Group 66. Combinations of real estate, insurance, loans, law office
- Major Group 67. Holding and other investment offices

**Division I. Services**

- Major Group 70. Hotels, rooming houses, camps, and other lodging places
- Major Group 72. Personal services
- Major Group 73. Business services
- Major Group 75. Automotive repair, services, and garages
- Major Group 76. Miscellaneous repair services
- Major Group 78. Motion pictures
- Major Group 79. Amusement and recreation services, except motion pictures
- Major Group 80. Health Services
- Major Group 81. Legal Services
- Major Group 82. Education Services
- Major Group 83. Social Services
- Major Group 84. Museums, art galleries, botanical and zoological gardens
- Major Group 86. Membership organizations
- Major Group 89. Miscellaneous services

The analysis of the benefits, costs, and economic impacts of extending the HCS to the nonmanufacturing sector are projected for 40 years. As indicated, this analysis reflects requirements of state right-to-know laws and voluntarily implemented hazard communication programs.

**Risk Evaluation/Benefits Analysis**

For this analysis OSHA estimated the percentage of workers exposed to hazardous chemicals. The percentage and numbers of exposed workers are shown in Table 2<sup>1</sup> by SIC group. The analysis of risks and benefits proceeds from the current annual incidence of chemical-related injuries and illnesses in the nonmanufacturing sector. For workers in this sector, measures of acute chemical source injuries and illnesses included nonlost workday (NLWD) injuries (13,871) and LWD illnesses (38,249); and fatalities (102). Measures for chronic illnesses include: chronic illness cases (17,153), cancer cases (25,388), and cancer deaths (12,890). The cancer cases category includes cancer deaths. (Note that tables used in the computer models for this analysis may vary slightly from these figures due to rounding.)

The benefits of the standard result from its expected reduction of occupational injuries and illnesses that are chemically related. Specifically, OSHA projects that the standard will avert 20 percent of these injuries and illnesses. (Five percent of all cancer

cases are assumed to be occupationally related; the 20 percent reduction is applied to this 5 percent of all cases among occupationally exposed workers in the nonmanufacturing sector.) However, the full reduction of chronic illnesses and cancers will not occur immediately; rather, the reduction for these cases is phased in over time. For chronic illnesses, the standard is expected to reduce 1 percent of the cases in the first year, 2 percent in the second year, and so on, until it reaches the full reduction of 20 percent. For cancer cases and cancer deaths, the standard is expected not to have an effect for the first 10 years, then it is expected to reduce 2 percent of the cases in the eleventh year, 4 percent in the twelfth year, and so on until it reaches the full reduction of 20 percent.

Benefits were monetized using two independent approaches. The first took into account medical costs and lost earnings incurred by each victim. This "human capital" approach resulted in first-year benefits of \$56.3 million, and a 40 year present value of \$6.66 billion (summarized in Table 3).

A second estimate of benefits was made using the "willingness-to-pay" approach. This approach resulted in first-year benefits of \$568.7 million, and a 40 year present value of \$54.6 billion (Table 3).

To provide comparability with the estimates of compliance costs, benefits were attributed to the states with right-to-know laws in proportion to the share of hazard communication costs projected for firms in those states. Under the "human capital" approach the present value of the 40 year stream of benefits from the extension of the HCS, after deducting states with right-to-know-laws, is \$3.80 billion (1985 dollars). Under the willingness-to-pay approach, the present value of the 40-year stream of benefits from extension of the HCS is \$31.0 billion, after deducting the amount attributable to states with right-to-know laws.

The monetized benefits of hazard communication in the nonmanufacturing sector, whether monetized in terms of human capital or willingness to pay, are presented after discounting (at 10 percent). Such discounting does not convey the magnitude of the expected number of injuries, illnesses and deaths that should be averted by the extension of hazard communication to the nonmanufacturing sector. The actual number of NLWD cases, LWD cases, chronic illness cases, cancer cases, cancer deaths, and other fatalities that are expected to be averted in the first,

<sup>1</sup> Tables 2 to 10 appear at the end of this article.

twentieth, and fortieth years are presented in Table 4.

The numbers of cases presented in Table 4 are projections of cases that will be averted by the state right-to-know laws and the extension of the HCS. Approximately 43 percent of these cases will be averted as a result of the hazard communication (*i.e.*, right-to-know) laws of the states. The remaining 57 percent uniquely relate to the extension of HCS and translate into the following: 148,400 cancer cases and 74,200 cancer deaths, 119,200 chronic disabling illnesses, 448,500 lost work day cases, 702,000 non-lost work day cases, and about 653 non-cancer fatalities avoided over the next 40 years. This estimate is believed to be conservative since OSHA assumed that only 5 percent of all cancers are occupationally related.

The original Regulatory Impact Analysis (RIA) for the HCS in manufacturing included estimates of benefits arising from the reduction of the incidence of chemical fires in the manufacturing sector. Using the RIA's methodology and newer data obtained from the U.S. Fire Administration's National Fire Incidence Reporting System, OSHA has determined that extension of the HCS to the nonmanufacturing sector would yield first-year benefits (*i.e.*, the value of property damages and losses avoided) of \$1.6 million (1985 dollars). For the twentieth and fortieth years, the estimates are \$2.2 and \$2.9 million, respectively. The present value of the 40-year stream of benefits is \$20.3 million (using a 10 percent discount rate).

Extending the HCS to the nonmanufacturing sector will also yield benefits by eliminating the need for employers to comply with multiple state and local right-to-know laws with differing requirements. The estimated benefits for the first year amount to \$39.6 million (1985 dollars). For the twentieth and fortieth years, the benefits are \$69.5 and \$125.5 million, respectively. The present value of the 40-year stream of benefits is \$578 million (using a 10 percent discount rate).

#### Compliance Costs

Compliance costs were estimated for five items: preparation of a written hazard communication program; container labeling; provision of MSDSs; maintenance of MSDSs; and information and training.

Table 5 provides a summary of total regulatory costs, the costs attributable to state right-to-know laws and the costs attributable to the extension of the OSHA standard. Costs are presented for the first, twentieth, and fortieth year of

the standard, as well as in terms of total present value over forty years. Present values were calculated using a 10 percent discount rate. Table 6 presents the costs by provision.

The total cost attributable to hazard communication laws during the first year the expanded HCS is effective is \$1.28 billion (1985 dollars). The first year cost associated with compliance with state right-to-know laws is \$597.3 million and \$687.3 million with the Federal HCS. The present value of the total HCS-related compliance costs over the 40 year period is \$1.57 billion.

Recordkeeping activities are required in the maintenance of MSDSs. As shown in Table 6, the Year 1 costs for this function amount to \$44.9 million (1985 dollars). The costs for the twentieth and fortieth years are \$6.0 and \$13.3 million. The present value of the costs over 40 years is \$84.8 million.

#### Economic Impacts

In order to assess the potential economic impacts of expanding the hazard communication standard, OSHA studied the impact of the first year costs on typical establishments that have not implemented any of the provisions. No allowance was made for partial compliance. If establishments can pass through or absorb first year costs, it is assumed that they can afford the minimal recurring costs related to training new employees and the introduction of new hazards. Table 7 presents the average compliance costs, assuming no current compliance, for typical establishments in each SIC Code. Typical establishments in the preponderance for SICs (over 80 percent) would incur compliance costs of less than \$700 in the first year.

In only one of the SICs does the average total first year cost exceed \$800 per establishment. The average first year cost per exposed employee in all SICs is less than \$250, or less than \$5.00 per worker per week.

Table 8 presents a comparison of the post-tax compliance costs to a typical firm's revenues and profits. A typical establishment's pre-tax compliance cost will be a negligible percentage (less than one-half of one percent) of the establishment's average annual revenue in over 96 percent of the SICs. The only exceptions, SIC 83 (Social Service) and SIC 86 (Membership Organizations), are primarily composed of nonprofit establishments that are characterized by relatively inelastic demand for their services. Given the magnitude of the compliance costs in relation to revenue, and the fact that the affected industry sectors are predominantly service providers, which are necessarily

characterized by localized markets, it appears likely that most firms will pass the compliance costs on to their customers. The post-tax compliance cost as a percent of profits is less than two percent in most (over 80 percent) of the SICs. Typical firms in these SICs should be able to absorb the costs even if they cannot pass them on to their customers. Given the small absolute magnitude of the compliance costs, and the fact that the analysis was conducted using first year compliance costs which are significantly higher than the recurring compliance costs for subsequent years, the expansion of the hazard communication standard should have little or no economic impact on typical firms.

#### Community Right-to-Know

The cost of extending the Superfund Amendments and Reauthorization Act (SARA) requirements for community right-to-know to the non-manufacturing sector was also estimated. Under Title III of SARA, establishments holding a given hazardous chemical in amounts greater than specified threshold quantities must report these chemicals and their quantities to State and local emergency planning committees and the local fire department. Cost estimates were based on EPA's projected phase-in threshold quantities of 10,000 pounds of hazardous chemicals in the first two years, and 500 pounds in the third and subsequent years that the requirements apply to the non-manufacturing sector. The estimated costs for the first and second years are \$8,614,300 and \$3,524,000, respectively. Third and fourth year costs were estimated to be \$63,492,800 and \$32,736,300.

The economic impact of extending SARA to nonmanufacturing was also estimated by OSHA. The third year average total cost of SARA was combined with OSHA's recurring average total costs of the Hazard Communication Standard to estimate the impact. The analysis indicated that the economic impact per facility of extending SARA to nonmanufacturing is minor, and that costs incurred by affected establishments could be passed on to the consumer. OSHA believes that the extension of SARA to nonmanufacturing will not affect the feasibility of the Hazard Communication Standard.

#### Regulatory Flexibility

As is shown in Table 9, a majority of establishments in all of the potentially impacted SICs are small businesses with fewer than 20 employees. Thus, the average compliance costs for small firms



TABLE 3.—ESTIMATED BENEFITS OF HAZARD COMMUNICATION—Continued

[Millions of 1985 dollars]

Type of injury/illness	Benefits—Year			
	1	20	40	TPV
Medical costs .....	10.9	29.2	86.5	192.2
Chronic:				
Lost earnings .....	20.5	722.8	1,365.8	2,967.5
Medical costs .....	2.8	143.4	404.1	582.8
Cancer:				
Lost earnings .....	0	651.6	1,309.6	1,735.2
Medical costs .....	0	298.9	906.4	875.8
Fatalities: Lost earnings .....	4.4	7.3	13.0	56.6
Total .....	56.3	1,887.3	4,158.3	6,659.1
WILLINGNESS-TO-PAY APPROACH				
NLWD .....	59.6	107.8	211.9	804.5
LWD .....	374.4	686.4	1,371.1	5,099.8
Chronic .....	61.7	2,173.7	4,121.6	8,924.3
Cancer .....	0	14,529.0	29,651.2	38,812.0
Fatalities .....	72.9	123.4	255.3	946.9
Total .....	568.7	17,620.7	35,581.2	54,587.4

Source: JACA Corporation Report.

TABLE 4.—INJURIES, ILLNESSES, AND FATALITIES AVERTED BY HAZARD COMMUNICATION IN THE NONMANUFACTURING SECTOR

Year	1	20	40	Commulative total
FEDERAL AND STATE STANDARDS COMBINED				
NLWD .....	17,000	30,800	60,600	1,354,500
LWD .....	10,700	19,600	39,200	865,800
Chronic .....	150	6,200	11,800	230,100
Cancer cases .....	0	8,200	17,000	286,500
Cancer deaths .....	0	4,100	8,500	143,300
Noncancer deaths .....	0	20	80	1,260
IMPACT OF FEDERAL STANDARD ALONE				
NLWD .....	8,800	16,000	31,400	702,000
LWD .....	5,500	10,200	20,300	448,500
Chronic .....	78	3,200	6,100	119,200
Cancer cases .....	0	4,248	8,806	148,400
Cancer deaths .....	0	2,100	4,400	74,200
Noncancer deaths .....	0	10	41	653

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.

TABLE 5.—SUMMARY OF HAZARD COMMUNICATION COSTS

[Millions of 1985 dollars]

Year	Total	State	OHSA
1 .....	1,284.5	597.3	687.2
20 .....	214.5	101.3	113.2
40 .....	384.0	184.0	200.0

TABLE 5.—SUMMARY OF HAZARD COMMUNICATION COSTS—Continued

[Millions of 1985 dollars]

Year	Total	State	OHSA
Total present value .....	2,926.4	1,356.3	1,570.1

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.



TABLE 6.—SUMMARY OF FEDERAL HCS COSTS BY PROVISION

[Millions of 1985 dollars]

Year	Main- tain MSDS's	Label- ing	Writ- ten	Train- ing	Provide MSDS's	Totals
1	44.9	12.8	137.4	472.9	19.3	687.2
20	6.0	20.3	5.7	78.7	2.5	113.2
40	13.3	35.2	9.4	136.5	5.6	200.0
TPV	84.8	170.9	170.9	1054.6	88.9	1570.1

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.

TABLE 7.—SUMMARY OF HCS COSTS PER ESTABLISHMENT NOT IN COMPLIANCE WITH HCS

[1985 dollars]

Industry	First year		Second year	
	Average costs per establish- ment	Average costs per exposed employee	Average costs per establish- ment	Average costs per exposed employee
SIC 01	502	45	32	3
SIC 02	475	59	23	3
SIC 07	490	100	28	6
SIC 08	358	54	26	4
SIC 09	304	242	6	5
SIC 13	497	38	72	5
SIC 15	150	31	12	3
SIC 16	225	18	34	3
SIC 17	169	32	14	3
SIC 40	603	86	51	7
SIC 41	285	76	11	3
SIC 42	273	98	12	4
SIC 44	442	30	55	4
SIC 45	892	40	72	3
SIC 46	461	40	55	5
SIC 47	398	115	15	4
SIC 48	319	50	15	2
SIC 49	798	35	64	3
SIC 50	472	238	14	7
SIC 51	700	234	32	11
SIC 52	335	68	20	4
SIC 53	372	50	27	4
SIC 54	323	82	18	5
SIC 55	437	68	31	5
SIC 56	265	149	6	3
SIC 57	288	190	6	4
SIC 58	337	76	17	4
SIC 59	321	184	7	4
SIC 60	410	61	21	3
SIC 61	217	76	9	3
SIC 62	312	79	18	5
SIC 63	250	46	16	3
SIC 64	236	155	5	3
SIC 65	306	186	8	5
SIC 66	238	181	5	4
SIC 67	415	167	12	5
SIC 70	408	57	37	5
SIC 72	500	148	16	5
SIC 73	444	62	43	6
SIC 75	381	130	14	5
SIC 76	325	99	15	5
SIC 78	351	83	26	6
SIC 79	348	117	20	7
SIC 80	581	57	57	6
SIC 81	242	153	7	5
SIC 82	287	46	10	2
SIC 83	337	132	11	4
SIC 84	608	99	39	6
SIC 86	273	149	6	3

TABLE 10.—ANALYSIS OF IMPACT ON SMALLEST VERSUS LARGEST ESTABLISHMENTS—Continued

[Comparing average costs as a percent of revenue]

SIC code	Average cost as a percent of revenue per establishment 250+ employees	Average cost as a percent of revenue per establishment 1-19 employees	Difference in cost as a percent of revenue due to size of establishments
49	0.002	0.049	0.047
50	0.003	0.037	0.034
51	0.006	0.038	0.032
52	0.008	0.046	0.038
53	0.002	0.029	0.026
54	0.002	0.054	0.052
55	0.006	0.044	0.038
56	0.002	0.104	0.102
57	0.003	0.117	0.114
58	0.008	0.158	0.150
59	0.003	0.055	0.051
60	0.001	0.012	0.011
61	0.000	0.038	0.038
62	0.003	0.028	0.025
63	0.000	0.069	0.069
64	0.002	0.179	0.177
65	0.005	0.124	0.119
66	0.001	0.054	0.053
67	0.003	0.096	0.093
70	0.021	0.283	0.262
72	0.007	0.346	0.339
73	0.028	0.204	0.175
75	0.004	0.151	0.148
76	0.099	0.205	0.106
78	0.007	0.113	0.106
79	0.016	0.071	0.055
80	0.269	0.370	0.101
81	0.118	0.077	-0.041
82	0.025	0.915	0.890
83	0.428	2.293	1.865
84	0.033	0.259	0.226
86	0.035	2.109	2.074
89	0.008	0.210	0.202

Source: U.S. Department of Labor, OSHA, Office of Regulatory Analysis.

OSHA is amending Parts 1910, 1915, 1917, 1918, 1926, and 1928 of Title 29 of the Code of Federal Regulations as follows:

#### PART 1910—OCCUPATIONAL SAFETY AND HEALTH STANDARDS

1. The authority citation for Subpart Z of Part 1910 continues to read as follows:

**Authority:** Secs. 6, 8, Occupational Safety and Health Act (29 U.S.C. 655, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 2509), or 9-83 (48 FR 35736) as applicable; and 29 CFR Part 1911.

Section 1910.1000 Tables Z-1, Z-2, Z-3 also issued under 5 U.S.C. 553.

Section 1910.1000 not issued under 29 CFR Part 1911, except for "Arsenic" and "Cotton Dust" listings in Table Z-1.

Section 1910.1001 not issued under Sec. 107 of Contract Work Hours and Safety Standards Act, 40 U.S.C. 333.

Section 1910.1002 not issued under 29 U.S.C. 655 or 29 CFR Part 1911; also issued under 5 U.S.C. 553.

Sections 1910.1003 through 1910.1018 also issued under 29 U.S.C. 653.

Section 1910.1025 also issued under 29 U.S.C. 653 and 5 U.S.C. 553.

Section 1910.1043 also issued under 5 U.S.C. 551 *et seq.*

Sections 1910.1045 and 1910.1047 also issued under 29 U.S.C. 653.

Sections 1910.1200, 1910.1499 and 1910.1500 also issued under 5 U.S.C. 553.

#### PART 1915—OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR SHIPYARD EMPLOYMENT

2. The authority citation for Part 1915 is revised to read as follows:

**Authority:** Sec. 41, Longshore and Harbor Workers' Compensation Act (33 U.S.C. 941); secs. 4, 6, 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76

(41 FR 25059), or 9-83 (48 FR 35736), as applicable; 29 CFR Part 1911.

Section 1915.99 also issued under 5 U.S.C. 553.

#### PART 1917—MARINE TERMINALS

3. The authority citation for Part 1917 is revised to read as follows:

**Authority:** Sec. 41, Longshore and Harbor Workers' Compensation Act (33 U.S.C. 941); secs. 4, 6, 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (48 FR 35736), as applicable; 29 CFR Part 1911.

Section 1917.28 also issued under 5 U.S.C. 553.

#### PART 1918—SAFETY AND HEALTH REGULATIONS FOR LONGSHORING

4. The authority citation for Part 1918 is revised to read as follows:

**Authority:** Sec. 41, Longshore and Harbor Workers' Compensation Act (33 U.S.C. 941);

secs. 4, 6, 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (48 FR 35736), as applicable.

Section 1918.90 also issued under 5 U.S.C. 553 and 29 CFR Part 1911.

## **PART 1926—SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION**

5. The authority citation for Subpart D of Part 1926 is revised to read as follows:

**Authority:** Sec. 107, Contract Work Hours and Safety Standards Act (Construction Safety Act) (40 U.S.C. 333); secs. 4, 6, 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 653, 655, 657); Secretary of Labor's Order No. 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (48 FR 35736), as applicable.

Section 1926.59 also issued under 5 U.S.C. 553 and 29 CFR Part 1911.

## **PART 1928—OCCUPATIONAL SAFETY AND HEALTH STANDARDS FOR AGRICULTURE**

6. The authority citation for Part 1928 is revised to read as follows:

**Authority:** Secs. 6 and 8, Occupational Safety and Health Act of 1970 (29 U.S.C. 655, 657); Secretary of Labor's Orders 12-71 (36 FR 8754), 8-76 (41 FR 25059), or 9-83 (48 FR 35736), as applicable; 29 CFR Part 1911.

Section 1928.21 also issued under 5 U.S.C. 553.

## **PARTS 1910, 1915, 1917, 1918, 1926 and 1928—[AMENDED]**

7. Parts 1910, 1915, 1917, 1918, and 1926 are amended by revising § 1910.1200 as set forth below, and by adding §§ 1915.99, 1917.28, 1918.90, and 1926.59 to contain the identical text of the revised § 1910.1200, including Appendices A, B, C, and D of 1910.1200:

### **§ — Hazard communication.**

(a) **Purpose.** (1) The purpose of this section 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. 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 the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, and to preempt any legal requirements of a state, or

political subdivision of a state, pertaining to the subject. Evaluating the potential hazards of chemicals, and communicating information concerning hazards and appropriate protective measures to employees, may include, for example, but is not limited to, provisions for: developing and maintaining a written hazard communication program for the workplace, including lists of hazardous chemicals present; labeling of containers of chemicals in the workplace, as well as of containers of chemicals being shipped to other workplaces; preparation and distribution of material safety data sheets to employees and downstream employers; and development and implementation of employee training programs regarding hazards of chemicals and protective measures. Under section 18 of the Act, no state or political subdivision of a state may adopt or enforce, through any court or agency, any requirement relating to the issue addressed by this Federal standard, except pursuant to a Federally-approved state plan.

(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 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.

(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) In work operations where employees only handle chemicals in sealed containers which are not opened under normal conditions of use (such as are found in marine cargo handling, warehousing, or retail sales), this

section applies to these operations only as follows:

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

(ii) Employers shall maintain copies of any material safety data sheets that are received with incoming shipments of the sealed containers of hazardous chemicals, shall obtain a material safety data sheet for sealed containers of hazardous chemicals received without a material safety data sheet if an employee requests the material safety data sheet, and shall ensure that the material safety data sheets are readily accessible during each work shift to employees when they are in their work area(s); and,

(iii) Employers shall ensure that employees are provided with information and training in accordance with paragraph (h) of this section (except for the location and availability of the written hazard communication program under paragraph (h)(1)(iii)), to the extent necessary to protect them in the event of a spill or leak of a hazardous chemical from a sealed container.

(5) 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, cosmetic, or medical or veterinary device, 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 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.

(6) 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;

(v) Food, drugs, cosmetics, or alcoholic beverages in a retail establishment which are packaged for sale to consumers;

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

(vii) 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, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers; and

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (i.e. tablets or pills).

(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 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, and engines, fuel tanks, or other operating systems in a vehicle, 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 employers.

"Employee" means a worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers or bank tellers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

"Employer" means a person engaged in a business where chemicals are either used, distributed, or are produced for use or distribution, including a contractor or subcontractor.

"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 § 190.109(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 University 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.

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

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

"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 employers within the United States.

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

"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 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. Appendix D sets out the

criteria to be used in evaluating trade secrets.

"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, job site, or project, 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 this 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 chemical manufacturer, importer, or 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, implement, and maintain at the workplace, 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); and,

(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.

(2) *Multi-employer workplaces.* Employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of other employer(s) may be exposed (for example, employees of a construction contractor working on-site) shall additionally ensure that the hazard communication programs developed and implemented under this paragraph (e) include the following:

(i) The methods the employer will use to provide the other employer(s) with a copy of the material safety data sheet, or to make it available at a central location in the workplace, for each hazardous chemical the other employer(s)' employees may be exposed to while working;

(ii) The methods the employer will use to inform the other employer(s) of any precautionary measures that need to be taken to protect employees during the workplace's normal operating conditions and in foreseeable emergencies; and,

(iii) The methods the employer will use to inform the other employer(s) of the labeling system used in the workplace.

(3) 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).

(4) 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) For solid metal (such as a steel beam or a metal casting) that is not exempted as an article due to its downstream use, the required label may be transmitted to the customer at the time of the initial shipment, and need not be included with subsequent shipments to the same employer unless the information on the label changes. The label may be transmitted with the initial shipment itself, or with the material safety data sheet that is to be provided prior to or at the time of the first shipment. This exception to requiring labels on every container of hazardous chemicals is only for the solid metal itself and does not apply to hazardous chemicals used in conjunction with, or known to be present with, the metal and to which employees handling the metal may be exposed (for example, cutting fluids or lubricants).

(3) 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 (49 U.S.C. 1801 *et seq.*) and regulations issued under that Act by the Department of Transportation.

(4) 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.

(5) Except as provided in paragraphs (f)(6) and (f)(7) 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.

(6) 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)(5) 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.

(7) 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.

(8) 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.

(9) 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.

(10) 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 (i) 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 be health hazards, and which comprise less than 1% (0.1% for carcinogens) of the mixture, if there is evidence that the ingredient(s) could be released from the mixture in concentrations which would exceed an established OSHA permissible exposure limit or ACGIH Threshold Limit Value, or could present a health hazard to employees; and,

(3) 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 not 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 preparing the material safety data sheet 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 employers 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 employer prior to or at the time of the shipment. If the material safety data sheet is not provided with a shipment that has been labeled as a hazardous chemical, the employer 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 employers. Retail distributors which sell hazardous chemicals to commercial customers shall provide a material safety data sheet to such employers upon request, and shall post a sign or otherwise inform them that a material safety data sheet is available. Chemical manufacturers, importers, and distributors need not provide material safety data sheets to retail distributors which have informed them that the retail distributor does not sell the product to commercial customers or open the sealed container to use it in their own workplaces.

(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) Where employees must travel between workplaces during a workshift, i.e., their work is carried out at more than one geographical location, the material safety data sheets may be kept at a central location at the primary workplace facility. In this situation, the employer shall ensure that employees can immediately obtain the required information in an emergency.

(10) 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 areas(s).

(11) 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, employees, and designated

representatives 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 of 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, epidemiologist, or occupational health nurse) providing medical or other occupational health services to exposed employee(s), and to employees or designated representatives, 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 to the health professional, employee, or designated representative, would not satisfy the purposes described in paragraph (i)(3)(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 services of the health professional (i.e. downstream employer, labor organization, or individual employee), employee, or designated representative, agree in a written confidentiality agreement that the health professional, employee, or designated representative, 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)(8) 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, employee, or designated representative 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, employee, or designated representative 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, employee, or designated representative, 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, employee, or designated representative 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, employee, or designated representative 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, employee, or designated representative has supported the claim that there is a medical or occupational health need for the information; and,

(iii) The health professional, employee, or designated representative 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, employee, or designated representative 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 a citation for a failure to release specific chemical identity information is

contested by the chemical manufacturer, importer, or employer, the matter will be adjudicated before the Occupational Safety and Health Review Commission in accordance with the Act's enforcement scheme and the applicable Commission rules of procedure. In accordance with the Commission rules, when a chemical manufacturer, importer, or employer continues to withhold the information during the contest, the Administrative Law Judge may review the citation and supporting documentation *in camera* or issue appropriate orders to protect the confidentiality or such matters.

(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 a trade secret.

(j) *Effective dates.* (1) Chemical manufacturers, importers, and distributors shall ensure that material safety data sheets are provided with the next shipment of hazardous chemicals to employers after September 23, 1987.

(2) Employers in the non-manufacturing sector shall be in compliance with all provisions of this section by May 23, 1988. (Note: Employers in the manufacturing sector (SIC Codes 20 through 39) are already required to be in compliance with this section.)

#### Appendix A to § — 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 apprised of both the change in body function and the signs and symptoms that may occur to signal that change.

other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operations of the business. Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

**Secrecy.** The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as his secret. Matters which are completely disclosed by the goods which one markets cannot be his secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business know it. He may, without losing his protection, communicate it to employees involved in its use. He may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as, for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are: (1) The extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.

**Novelty and prior art.** A trade secret may be a device or process which is patentable; but it need not be that. It may be a device or process which is clearly anticipated in the prior art or one which is merely a mechanical improvement that a good mechanic can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against unlicensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention which is a requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort to the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.

8. Section 1915.97 would be revised to read as follows:

**§ 1915.97 Health and sanitation.**

The provisions of this section shall apply to ship repairing, shipbuilding and shipbreaking, except where indicated otherwise.

(a) The employer shall provide all necessary controls, and the employees shall be protected by suitable personal protective equipment against the

hazards identified under § 1915.99 of this part and those hazards for which specific precautions are required in Subparts B, C, and D of this part.

(b) The employer shall provide adequate washing facilities for employees engaged in the application of paints or coatings or in other operations where contaminants can, by ingestion or absorption, be detrimental to the health of the employees. The employer shall encourage good personal hygiene practices by informing the employees of the need for removing surface contaminants by thorough washing of hands and face prior to eating or smoking.

(c) The employer shall not permit employees to eat or smoke in areas undergoing surface preparation or preservation or where shipbreaking operations produce atmospheric contaminants.

(d) The employer shall not permit employees engaged in ship repair work on a vessel to work in the immediate vicinity of uncovered garbage and shall ensure that employees working beneath or on the outboard side of a vessel are not subject to contamination by drainage or waste from overboard discharges.

(e) No minor under 18 years of age shall be employed in shipbreaking or related employments.

9. Section 1928.21 would be amended by adding paragraph (a)(5) as follows:

**§ 1928.21 Applicable standards in 29 CFR Part 1910.**

(a) \* \* \*

(5) Hazard communication—  
§ 1910.1200.

\* \* \* \* \*

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