

KELLER'S INDUSTRIAL SAFETY REPORT

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FORMALDEHYDE STANDARD PROPOSED — After months of negotiating and many delays, OSHA has finally published amendments to the formaldehyde standard.

INJURY AND ILLNESS RECORDKEEPING — Accurate employer injury and illness records are now a priority for OSHA. Find out what you can now expect during an OSHA inspection of your records.

MSDS STANDARDIZATION — MSDSs are often considered highly technical and of little use to the average worker. Find out about the problems with MSDSs and efforts underway to improve them.

MORE ABOUT CALIFORNIA S.B. 198 — New proposed regulations implementing S.B. 198, the legislation requiring employers to have an injury prevention program, establish specific criteria for safety and health committees in the workplace.

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OSHA Highlights

Amendments Proposed To Formaldehyde Standard

The Occupational Safety and Health Administration (OSHA) is proposing to amend its existing regulation for occupational exposure to formaldehyde, 29 CFR 1910.1048, in response primarily to a remand by the U.S. Court of Appeals for the D.C. Circuit in *UAW v. Pendergrass*. The proposed amendments would lower the permissible exposure level for formaldehyde from the existing level of 1 ppm (parts per million) as an 8-hour time-weighted average to an 8-hour time-weighted average of 0.75 ppm. OSHA is also proposing to add medical removal protection provisions to supplement the existing medical surveillance requirements for those employees suffering significant eye, nose or throat irritation and for those suffering from dermal irritation or

sensitization from occupational exposure to formaldehyde.

In addition, certain changes are being proposed to the standard's hazard communication and employee training requirements. These amendments would establish specific hazard labeling requirements for solid materials capable of off-gassing formaldehyde between 0.1 ppm and 0.5 ppm and other hazard labeling requirements for those solid materials capable of off-gassing above 0.5 ppm under reasonably foreseeable conditions of use. Employees exposed to formaldehyde concentrations of 0.1 ppm or more would have to be trained annually under the proposal.

Background of the Regulation

On December 4, 1987, OSHA issued a comprehensive regulation covering occupational exposure to formaldehyde at 29 CFR 1910.1048. This rule reduced the permissible exposure limits (PELs) to 1 part formaldehyde per million parts of air (ppm) as an 8-hour time-weighted average (TWA), and established a 2 ppm 15-minute short term exposure limit (STEL). The comprehensive standard also included an "action level" of 0.5 ppm, measured as an 8-hour TWA, and provisions for employee exposure monitoring, medical surveillance, recordkeeping, regulated areas, emergency procedures, preferred methods to control exposure, maintenance and selection of personal protective equipment, and hazard communication. OSHA's rule was based on the consideration of a wide range of new evidence including animal bioassays and epidemiological evidence. It was based in part on OSHA's recognition of formaldehyde as a potential occupational carcinogen as well as its irritating and sensitizing effects.

The standard was challenged in the United States Court of Appeals for the District of Columbia Circuit by both industry and labor. Four unions challenged the standard as being insufficiently protective. They contended that the PEL was not set low enough to eliminate all significant risk of harm from both cancer and from formaldehyde's irritant effects. They also objected to OSHA's decision not to include a medical removal protection (MRP) provision in the standard, and to a number of other

aspects of the standard, including the setting of the action level, the lack of a requirement for annual medical examinations, and the provisions regarding labeling and training.

The Formaldehyde Institute (FI), on the other hand, sought review of the hazard communication provisions in paragraph (m) of the standard. While challenging these provisions in court, the FI, along with others, petitioned OSHA for an administrative stay of the hazard communication provisions and reconsideration of these provisions. After giving the public an opportunity to comment on this petition, OSHA stayed the hazard communication provisions, paragraphs (m)(1)(i) through (m)(4)(ii), and announced its intention to consider further regulatory action on these provisions. The effect of the stay was to continue the implementation of OSHA's generic Hazard Communication Standard (29 CFR 1910.1200) in effect with respect to formaldehyde.

Court Action

The Court of Appeals affirmed the final standard in most respects but concluded that OSHA had failed to adequately explain why it had not adopted a lower PEL to protect against the carcinogenic effects of formaldehyde exposure and why it had not included medical removal protection (MRP) provisions in the standard. The Court's decision required OSHA to better explain or reevaluate the risk assessment that led it to choose a PEL of 1 ppm. Should OSHA conclude that a significant risk remains at 1 ppm, according to the Court, the Agency could then adjust the standard accordingly. The Court's decision also required OSHA to better explain or reevaluate its decision not to include an MRP provision in the standard.

The Court did not review the hazard communication provisions of the standard because they had been administratively stayed for reconsideration at the time. Because all of the provisions of the standard are interconnected, OSHA has determined that the hazard communication provisions should be reconsidered together with the remand issues.

OSHA's Proposal

Following the remand, parties to the litigation

developed recommendations for revisions to the standard that they believed represented a reasonable resolution of all outstanding issues. OSHA's proposed revisions to the formaldehyde standard are consistent with the recommendations of the parties to the litigation and incorporate them. The final proposal significantly increases employee protection over the existing standard by lowering the PEL, adding a provision for medical removal protection, and requiring annual training for all workers exposed at or above 0.1 ppm. The final proposal also requires less inclusive labels on certain formaldehyde-containing products. All containers of products that required labels under the original standard will still require labels. The revised labels will give employees access to complete hazard information, and employees will be better able to evaluate these hazards because they will now receive annual training instead of one-time training. OSHA believes that these changes in the unique case of formaldehyde will not reduce employee protection.

Rulemaking Procedure

The Agency plans to use expedited rulemaking in this proceeding. OSHA is asking for comments on the proposal but believes that there will be very few comments submitted because the proposal is consistent with a consensus of the parties who were active during the rulemaking proceeding and the issues addressed have been fully ventilated in the comprehensive rulemaking record already compiled. Therefore, the comment period was limited to 30 days.

Although the rules are just proposed, OSHA believes that they represent its best judgment as to how to resolve the remaining issues before it. Therefore, in the absence of significant comments to the contrary, the Agency gives notice that the amendments as proposed will probably be adopted as a final rule.

Interpretative Guidance On The Electrical Standard

In August of 1990, OSHA issued a new standard on electrical safety-related work practices for general industry. These performance-oriented regulations complement the existing

electrical installation standards by addressing safe work practices as a means to prevent electrical accidents.

The new standard adds Sections 1910.331 through 1910.335 to Subpart S. The new standard:

- Requires employees who face a risk of electric shock not reduced to a safe level by electrical installation requirements to be trained in and familiar with the safety-related work practices that pertain to them;
- Specifies some safety-related work practices that must be used when working on or near exposed energized or deenergized parts;
- Provides guidelines for the use, care, and handling of certain electric equipment; and
- Outlines safeguards for personal protection including the use of personal protective equipment and protective tools.

The bulk of the regulations became effective in December of 1990. The training requirements in the new standard, however, did not become effective until August 6, 1991.

OSHA recently released Instruction STD 1-16.7 to its inspectors. The STD establishes policies and provides interpretative guidance to inspectors on the Electrical Safety-Related Work Practices standard. This document can be valuable to you as an employer or safety director because it can be used to determine how the electrical standard should be implemented. A portion of the Instruction STD follows.

Excerpts From OSHA Instruction STD 1-16.7

Subject: Electrical Safety-Related Work Practices - Inspection Procedures and Interpretive Guidelines

- A. *Purpose.* This instruction establishes policies and provides interpretive guidelines to ensure uniform enforcement of the standard for Electrical Safety-Related Work

Practices, 29 CFR 1910.331 through .335.

H. *Inspection Guidelines.* In so far as possible the compliance officer shall integrate inspection procedures for this standard with those of 29 CFR 1910.147 (lockout/tagout standard).

1. The following guidance provides a general framework to assist the compliance officer during all inspections:

a. The employer's written procedures required under 29 CFR 1910.333(b)(2)(i) shall be reviewed to determine if they cover the hazards likely to be encountered.

(1) A copy of paragraph (b) of 1910.333 maintained by the employer will fulfill this requirement.

(2) A copy of the written procedures for locking and tagging required by 29 CFR 1910.147 will also comply with this requirement, provided those procedures address the electrical safety hazards covered by Subpart S and provided the procedures conform to 1910.333(b).

(3) If the employer has chosen to utilize procedures developed to comply with 1910.147 for electrical as well as other hazards, the written procedures must include steps corresponding to requirements in Section 1910.333 for application of locks and tags and verification of deenergized conditions (29 CFR 1910.333(b)(2)(iii)(D) and (b)(2)(iv)(B)).

b. Beginning August 6, 1991, the training practices of the employer for qualified and unqualified employees shall be evaluated to assess whether the training provided is appropriate to the tasks being performed or to be performed.

(1) All employees who face a risk of

electric shock, burns or other related injuries, not reduced to a safe level by the installation safety requirements of Subpart S, must be trained in safety-related work practices required by 29 CFR 1910.331-.335.

(2) In addition to being trained in and familiar with safety related work practices, unqualified employees must be trained in the inherent hazards of electricity, such as high voltages, electric current, arcing, grounding, and lack of guarding. Any electrically related safety practices not specifically addressed by Sections 1910.331 through 1910.335 but necessary for safety in specific workplace conditions shall be included.

(3) The training of qualified employees must include at the minimum the following:

(a) The ability to distinguish exposed live parts from other parts of electric equipment.

(b) The ability to determine the nominal voltage of live parts.

(c) The knowledge of clearance and/or approach distances specified in 1910.333(c).

(4) During walkaround inspections, compliance officers shall evaluate any electrical-related work being performed to ascertain conformance with the employer's written procedures as required by 1910.333(b)(2)(i) and all safety-related work practices in Sections 1910.333 through 1910.335. (See J of this instruction for clarification.)

(5) Any violations found must be documented adequately, including the actual voltage level.

I. *Interpretative Guidance.* The following guidance is provided relative to specific provisions of the standard for Electrical Safety-Related Work Practices:

1. Definitions: Qualified/Unqualified Persons.

- a. The standard defines a qualified person as one familiar with the construction and operation of the equipment and the hazards involved. "Qualified Persons" are intended to be only those who are well acquainted with and thoroughly conversant in the electric equipment and electrical hazards involved with the work being performed.

(1) Whether an employee is considered to be a "qualified person" will depend on various circumstances in the workplace. It is possible and, in fact, likely for an individual to be considered "qualified" with regard to certain equipment in the workplace, but "unqualified" as to other equipment. (See 29 CFR 1910.332(b)(3) for training requirements that specifically apply to qualified persons.) Only qualified persons may place and remove locks and tags.

(2) An employee who is undergoing on-the-job training, who, in the course of such training, has demonstrated an ability to perform duties safely at his or her level of training, and who is under the direct supervision of a qualified person, is considered to be a qualified person for the performance of those duties.

b. Where the term "may not" is used in these standards, the term bears the same meaning as "shall not".

c. Training requirements apply to all employees in occupations that carry a risk of injury due to electrical hazards that are not sufficiently

controlled under 29 CFR 1910.303 through 1910.308.

3. Working on Deenergized Parts.

a. Circuit parts that cannot be deenergized using the procedures outlined in 1910.333(b)(2) must be treated as energized (as specified in 1910.333(b)(1)), regardless of whether the parts are, in fact, deenergized.

b. Deenergized parts are required to be locked and tagged unless exempted under 1910.333(b)(2)(iii)(C) or 1910.333(b)(2)(iii)(E), as discussed below. If so exempted, either a lock or tag is required.

(1) If a tag is used without a lock, it shall be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by the use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.

(2) A lock may be placed without a tag only under the following conditions:

(a) Only one circuit or piece of equipment is deenergized, and

(b) The lockout period does not extend beyond the work shift, and

(c) Employees exposed to the hazards associated with reenergizing the circuit or equipment are familiar with this procedure.

4. Verification of Deenergization Is Mandatory. This verification must be done by a qualified person.

- a. The qualified person shall activate the equipment operating controls or otherwise verify that the equipment cannot be restarted.
 - b. Test equipment shall be used to ensure that electrical parts and circuit elements have been deenergized.
 - c. Testing instruments and equipment shall be visually inspected for external defects or damage before being used to determine energization (29 CFR 1910.334(c)(2)).
 - d. For circuits over 600 volts nominal, the test equipment shall be checked for proper operation immediately before and immediately after the test.
5. Reenergization. The following requirements shall be met, in the order given, before circuits or equipment are reenergized, even temporarily.
- a. A qualified person shall conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed so that the circuits and equipment can be safely energized.
 - b. Potentially exposed employees shall be warned to stay clear of circuits and equipment prior to reenergizing.
 - c. Each lock and tag shall be removed by the employee who applied it. However, if the employee is absent from the workplace, then the lock or tag may be removed by a qualified person designated to perform this task provided that the employer ensures:
 - (1) That the employee who applied the lock or tag is not available at the workplace, and
 - (2) That the employee is informed that the lock or tag has been removed before he or she resumes work at the workplace.
- (3) That there is to be a visual determination that all employees are clear of the circuits and equipment prior to lock and tag removal.
6. Working On or Near Overhead Power Lines, 29 CFR 1910.333(c)(3).
- a. OSHA believes that the preferred method of protecting employees working near overhead power lines is to deenergize and ground the lines when work is to be performed near them.
 - b. In addition to other operations, this standard also applies to tree trimming operations performed by tree workers who are not "qualified persons". In this respect the exclusion in 1910.333(c)(1) applies only to "qualified persons" performing line-clearance tree trimming (trimming trees that are closer than 10 feet to overhead power lines).
 - c. The standard does not prohibit workers who are not "qualified persons" from working in a tree that is closer than 10 feet to power lines so long as that person or any object he or she may be using, does not come within 10 feet of a power line. However, it would require "qualified persons" to perform the work if the worker or any object he or she maybe using will come within 10 feet of an exposed energized part or if a branch being cut may be expected to come within 10 feet of an exposed energized part while falling from the tree. (See 29 CFR 1910.333(c)(3)(ii).)
 - d. The purpose for the approach distance requirements is to prevent contact with and/or arcing from energized overhead power lines. The approach distance applies to tools used by employees as well as

the employees themselves. Table S-5 calls for the following approach distances for qualified employees only:

Voltage Range (AC) (phase to phase)	Minimum Approach Distance
300V and less	Avoid contact
Over 300V, not over 750V	1 ft. 0 in. (30.5 cm)
Over 750V, not over 2kV	1 ft. 6 in. (46 cm)
Over 2kV, not over 15kV	2 ft. 0 in. (61 cm)
Over 15kV, not over 37kV	3 ft. 0 in. (91 cm)
Over 37kV, not over 87.5kV	3 ft. 6 in. (107 cm)
Over 87.5kV, not over 121kV	4 ft. 0 in. (122 cm)
Over 121kV, not over 140 kV	4 ft. 6 in. (137 cm)

NOTE: *Unqualified employees are required to adhere to the 10 ft. minimum.*

- e. Employees working on or around vehicles and mechanical equipment, such as gin-pole trucks, forklifts, cherry pickers, garbage trucks, cranes and elevating platforms, who are potentially exposed to hazards related to equipment component contact with overhead lines, shall have been trained by their employers in the inherent hazards of electricity and means of avoiding exposure to such hazards.
- f. The standard for Electrical Safety-Related Work Practices can be applied with respect to electrical hazards related to any size, utilization or configuration of overhead power lines in general industry; e.g., residential power lines, remotely located overhead power lines, temporarily rigged overhead power lines, and overhead power lines along streets and alleys.

Recordkeeping Receiving Increased Attention From OSHA

Part 1904 of the OSHA regulations requires employers to prepare and maintain records of occupational injuries and illnesses. Injuries and illnesses in the workplace are to be recorded on the OSHA No. 200 Log and Summary of Occupational Injuries and Illnesses or an equivalent form. OSHA and the Bureau of Labor Statistics have established guidelines to aid employers in determining whether an injury or illness is recordable on the OSHA log.

In recent years, there has been some concern about the quality and accuracy of employer recordkeeping practices. As a result, OSHA has revised its inspection procedures relating to the verification of injury and illness records. In a notice to its inspectors, OSHA outlined new procedures that will be used at every general industry inspection in order to verify the accuracy of injury and illness records.

Enhanced Verification of Records

In the spring of 1991, OSHA issued Instruction CPL 2.91 on the Enhanced Verification of Records to its inspectors. This compliance document explains the new procedures inspectors are to follow in order to verify the accuracy of employer OSHA No. 200 logs during an inspection of a facility. During every general industry inspection, an OSHA inspector must now verify the accuracy of injury and illness records as follows.

Conduct a records verification check. The inspector must verify the accuracy of the log entries by cross-checking medical records, workers' compensation records, First Report of Injury, or OSHA-101s with the OSHA-200 log entries. For each establishment, the number of records to be reviewed by the inspector is to be no less than 10 percent of the number of employees currently employed, up to 25 records. In establishments with 11 to 29 employees, the 10-percent figure may be doubled. Emphasis will be placed on current and previous calendar year records.

Calculate the LWDI rate. The lost workday injury (LWDI) rate for the establishment will still be calculated, but it will no longer be used as a guide to determine the scope of the subsequent inspection of the facility.

Conduct employee interviews. During the opening conference, the inspector must make any employee representatives aware of the enhanced records verification process and of the need to interview a specific number of employees as part of the records verification procedure. The inspector will either ask employee representatives for input into the selection of employees for the interviews or will simply select a reasonable number of non-supervisory employees in different areas of the establishment. The number of employees to be interviewed will be a representative sample of the employees currently employed up to a maximum of 15 percent. Fifteen percent may be exceeded if recordkeeping deficiencies are noted.

Employees interviewed will be asked the following questions by the inspector:

Have you ever seen an OSHA 200 log?

Have you ever suffered a work-related injury or illness?

Was the injury or illness reported?

Was a workers' compensation claim filed as a result of the injury or illness?

Did the injury or illness result in lost workdays or restricted work activity?

Are you aware if any of your co-workers experienced work-related injuries and illnesses?

Employee responses to the above questions will be cross-checked with injury and illness records.

Conduct interviews with the designated recordkeeper. The designated recordkeeper will also be interviewed as part of the inspection. Questions posed to the recordkeeper will focus on the manner in which injuries and illnesses are recorded and on the definitions, concepts, and interpretations associated with the recordkeeping requirements. The purpose of the inter-

view is to assess the employer's and recordkeeper's knowledge of the OSHA regulations and the BLS recordkeeping guidelines and to determine whether recordkeeping problems exist. Some of the questions to be asked the recordkeeper include:

Do you have a completed OSHA 200 log for the last calendar year?

Do you have supplementary records for each entry on the log (i.e. OSHA 101, work comp form, insurer's form, etc.)?

How long does it take to enter the injury or illness on the log?

Who decides whether the case is recordable?

Are decisions made differently in borderline cases?

How is assistance obtained if needed?

When and where are year-end summaries posted?

How do you determine if a case is work-related?

When does a case involve lost workdays?

How do you distinguish between an injury and illness, medical treatment, and first aid?

According to OSHA, increased attention to the accuracy of employee injury and illness records is necessary because accurate records are the cornerstone of effective safety and health programs for both private and public sector employees. For the employer, proper recordkeeping facilitates the identification of specific hazard areas and general trends in injuries and illnesses, which in turn leads to effective and timely hazard abatement actions. For OSHA, improved accuracy of injury and illness records allows the agency to more effectively target inspections so that the most hazardous workplaces receive the greatest attention.

OSHA Reviewing Contractor Safety in Process Safety Management

OSHA has announced that it will reopen the issue of contractor safety as it pertains to the proposed Process Safety Management standard. OSHA's action was prompted by the

completion of the John Gray report which studied safety and health issues as they relate to contract work in the petrochemical industry. The John Gray report, which was completed by the John Gray Institute of Lamar University, examined such factors as the extent of the petrochemical industry's reliance upon contract employees; the nature of work performed by contractors; the role of safety records in contractor selection; the training provided to employees and the supervision accorded to safety and health compliance for contract operations as compared with that for company operations; and injury and illness recordkeeping.

The proposed Process Safety Management standard contains specific provisions concerning contractors, requiring employers to inform contractors of certain dangers near a process, to explain applicable emergency action plans, and to make the work practices and safety rules of the facility known to the contract employee. Since the John Gray report contains information that may be relevant to the contractor provisions of the Process Safety Management proposal, OSHA is extending the comment period for the proposal to allow the public an opportunity to comment on the report. OSHA is seeking comments which particularly focus on how the report should influence the Process Safety Management proposal.

Copies of the John Gray report, "Managing Worker Safety and Health: The Case of Contract Labor in the U.S. Petrochemical Industry," is available from the Docket Office, U.S. Department of Labor, Occupational Safety and Health Administration, N2625, 200 Constitution Avenue, N.W., Washington, DC 20210, (202)523-7894.

OSHA Seeks Indoor Air Quality Information

OSHA recently published a notice requesting comments and information on issues pertaining to indoor air quality (IAQ) in occupational environments. The notice raises major issues which OSHA needs to consider in determining whether regulatory action is appropriate and feasible to control health problems related to poor indoor air quality. The issues on which comment is requested are organized into five

broad categories:

- (1) Definition of and Health Effects Pertaining to Indoor Air Quality;
- (2) Monitoring and Exposure Assessment;
- (3) Controls;
- (4) Local Policies and Practices; and
- (5) Potential Content of Regulation.

Specifically, information is requested on the definition of and the health effects attributable to poor indoor air quality; ventilation system performance; protocols for assessing indoor air quality; mitigation methods; building maintenance programs; and the potential contents of a regulation should OSHA determine that such action is appropriate.

In addition to seeking information regarding IAQ concerns in general, issues addressed in the notice also focus on specific indoor air contaminants such as passive tobacco smoke (PTS), radon, and bioaerosols. With respect to these particular contaminants, information is requested on their relative contribution to the overall degradation of indoor air quality as well as associated health effects and methods of exposure assessment and mitigation.

The notice invites interested parties to submit comments, recommendations, data and information on the issues outlined as well as other pertinent issues. The information received in response to the notice will be carefully reviewed and will assist OSHA in determining whether it is necessary and appropriate to pursue regulatory action concerning occupational exposures to indoor air contaminants. OSHA has requested that comments on the issue be postmarked no later than January 21, 1992. For additional information on the subject, see the September 20 FEDERAL REGISTER, page 47892.

OSHA Cites Postal Service

OSHA recently issued a formal citation against the U.S. Postal Service for willful violations of the Occupational Safety and Health Act. OSHA has found that the Peoria, IL and Columbus, OH post offices willfully exposed

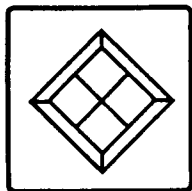
their employees to severe hazards at their work on two widely used letter sorting machines. These machines are in use throughout the Postal Service.

Although OSHA has the responsibility for overseeing the health and safety of federal workers, it is virtually unprecedented for the agency to take the drastic step of actually citing a fellow agency for failing to correct serious workplace dangers.

The incidence of painful and crippling cumulative trauma disorders or repetitive motion illnesses which afflict large numbers of letter sorting machine operators is quite prevalent in the postal service. Over many years employees and unions have complained to the Postal Service and to OSHA about these problems. Repeatedly, OSHA has investigated the complaints and made recommendations to the Postal Service which has refused to act on them.

After an independent study of the Peoria and Columbus operations showed clear evidence of cumulative trauma disorders among employees, OSHA moved to issue a strongly worded citation setting forth a timetable for corrective action at the two post offices.

The effect of OSHA's citation on workplace safety and health at the postal service is unclear since OSHA has no power to fine or sue a federal agency.



Hazard Communication

Efforts to Standardize MSDSs Underway

Current Occupational Safety and Health Administration (OSHA) activity will probably lead to reform of the Hazard Communication Standard (HCS) that will simplify and standardize the format of material safety data sheets (MSDS). Two recent OSHA reports summarized what has become common knowledge — many MSDSs are incomprehensible and incomplete. An unnamed OSHA official has been quoted as saying that the

agency will probably propose standardized data sheets by a year from now.

The Problem

The Hazard Communication Standard was introduced in 1983 with the intent to provide manufacturing workers with the chemical information they needed to protect themselves. Its expansion in 1987 to cover non-manufacturers was lauded by labor organizations and citizens' groups as a landmark advance for all workers. The chemical inventory, written program, labels, material safety data sheets, and training were hailed as keys to a new era where workers would play an active role in ensuring their own safety.

Nearly nine years later, a serious unforeseen weakness of this performance-oriented standard has become glaringly apparent: material safety data sheets are largely unreadable, incomprehensible scientific fact sheets, which often prove of little help for the workers they were intended to serve. The lack of specifications has resulted in a multitude of formats and a volume of information beyond the comprehension of the average worker. In addition, data sheets received from foreign countries with varying requirements may not carry all of the information mandated in the United States.

The issues of international variances in chemical information, workers with English as a second language, and adult functional illiteracy just add fuel to the fact that the average literate worker cannot interpret an MSDS easily. As a result of these problems, the last few years have brought calls from all sides for modification and standardization of MSDSs. This "back-to-basics" movement most likely will make the MSDS the accessible informational tool it originally was meant to be.

No International Uniformity

The International Labor Organization (ILO) first addressed the issue of national disparities in a 1988 report, then in the 1989 "Safety in the Use of Chemicals at Work." Beyond differing legislated requirements, the recognized information about a chemical may vary from one country to another. Some countries use symbols to indicate hazards, while the

United States does not.

A more extreme example is the category of carcinogens. What the United States Hazard Communication regulation deems carcinogenic may not necessarily be considered so in countries exporting to the United States. The result is either costly revision of MSDSs by exporters to America or inaccurate information (for U.S. purposes) being transmitted without the proper revision taking place.

These disparities have led to growing international recognition for the need to harmonize classification and communication of chemical information. In 1990, the ILO reports and committee work led to a proposal for the International Program of Chemical Safety (IPCS), which is sponsored by ILO, the World Health Organization (WHO), and the United Nations Environmental Program (UNEP), to provide the structure within which to work toward harmonization of information.

OSHA responded to this international debate by calling for comments on international issues regarding MSDSs in the January 22, 1990, FEDERAL REGISTER. In that request for information OSHA commented that "international harmonization of requirements for classifying chemicals, as to their hazards, labels, and MSDSs, would enhance worker protection, community awareness and preparedness, and facilitate international trade." More recently, projection of an OSHA health standard to cover international issues that concern hazard communication has been included in the Bush Administration's 1992 budget.

Worker Comprehension

The simple problem of comprehending the technical information contained on a typical MSDS is the other major issue pushing Hazard Communication reform. If a worker does not understand it, then the MSDS has failed in its main Hazard Communication intent of informing the worker about potential dangers posed by a substance. Present MSDS requirements are loose: they include particular categories, but no set format. Lengths may vary anywhere from one page to 15 or 20 pages, depending on the amount of hazard informa-

tion available on a given chemical. Manufacturers prefer to err on the side of providing too much rather than too little information to avoid liability for having left out pertinent data. And the data usually include scientific jargon and acronyms like "hepatotoxin," "TLV," and "STEL." Even if trained on the MSDS categories and these technical terms, how many workers will be able to locate and understand such information quickly in the event of an emergency?

Comprehension is difficult enough to achieve with the average, educated worker. Include the fact that approximately 18 percent of the workforce is likely to be functionally illiterate and the need for simplification takes on a new urgency. The functionally illiterate include people whose education is deficient, as well as a growing number of workers for whom English is a second language. The use of symbols, the placement of pertinent information in assigned places on a standardized form, and color-coding are all suggested methods of improving the communication of information to these functionally illiterate workers. Not surprisingly, these methods also lend themselves to the international chemical information problems described, as well as to the understanding of the average literate worker.

OSHA Action

OSHA has not been unaware of the MSDS comprehensibility problem, as evidenced by two rounds of grants to labor groups and trade unions. In 1990, OSHA handed out \$450,000 in grant money to programs seeking to improve understanding of MSDSs. A second round of grants in 1991 brought the total to just over \$1 million. The grants are intended to "help us simplify the technical information on MSDSs," explains Assistant Secretary of Labor Gerard Scannell.

Further OSHA activity includes the May 17, 1990, FEDERAL REGISTER call for comments on the presentation and quality of chemical hazard information transmitted under the HCS. Companies were asked for their experiences in preparation of MSDSs and about the effectiveness and quality of the MSDSs downstream users receive from manufacturers. Detailed questions were asked in

both categories, with an August 15, 1990, deadline given for responses. Agency officials appeared before the Labor Department in April 1991 in a briefing to discuss a series of options to improve hazard communication, including the possibility of more prescriptive requirements concerning the language and format of MSDSs to make them more comprehensible.

Organizations have taken seriously the OSHA invitation to get involved in the reform process. The American Society of Safety Engineers (ASSE) published its response to the May 1990 request for comments as an open letter in the April 1991 issue of *Professional Safety*, its society publication. The recipients of the federal grants are developing training programs and coming up with recommendations for formatting and standardization of MSDSs. The Chemical Manufacturers Association (CMA) worked with OSHA and the American National Standards Institute (ANSI) to develop "Guidelines for the Preparation of Material Safety Data Sheets," interim guidelines intended to foster uniformity of MSDSs. According to the manager of health programs at CMA's Washington office, they hope to have a final format by mid-1992 that would replace the current OSHA Form 174.

The flurry of current activity suggests that OSHA is serious about addressing the issue of MSDS standardization, both to promote international uniformity and to aid worker comprehension. The 1992 budget and unofficial statements indicate such reform could take place in 1992. For those overwhelmed workers and companies struggling to make some sense of the current MSDS jumble, such reform cannot happen too soon.

MSDS Information Available

The CMA operates, as a public service, the Chemical Referral Center in Washington, D.C., which answers questions about material safety data sheets and directs callers to the contact persons at chemical companies and other organizations for answers. The Center uses a computer database profiling about 300,000 chemicals. Their telephone number is 1-800-CMA-8200.



Community Right To Know

Toxics Release Inventory

TRI Releases Decrease by Almost 800 Million Pounds in 1989

Initial results of the 1989 Toxics Release Inventory (TRI) show that 5.7 billion pounds of toxic chemicals were released into the nation's environment by 22,650 industrial facilities. The release data represent a decrease of almost 800 million pounds from releases reported for 1988, EPA Administrator William K. Reilly said May 17 when the 1989 data were released.

The inventory shows that in 1989, 189 million pounds of toxic chemicals were released into rivers, lakes, streams, and other bodies of water; 2.4 billion pounds were emitted into the air; 445 million pounds were disposed of in landfills; and 1.2 billion pounds were injected into underground wells. An additional 551 million pounds were transferred to municipal wastewater treatment plants, and 916 million pounds were transferred to treatment and disposal facilities.

From 1987, the first year for which TRI data were collected, to 1989, emissions and transfers of all TRI chemicals decreased by 1.3 billion pounds. Estimated air releases, which account for 42 percent of all releases and transfers, decreased by 8 percent; releases to water decreased by 54 percent; and releases to land decreased by 39 percent. About half of the decline in releases to water and land, however, may be attributable to facilities' faulty estimates of 1987 releases of mineral acids and metal compounds.

Evidence suggests, though, that the numbers indicate real reductions in toxic emissions. First, 2,000 more facilities reported for 1989 than for 1987. Second, industrial production by the majority of industries required to submit reports increased between 1987 and 1989.

The TRI's effectiveness as a tool for improving

environmental management has far exceeded EPA's expectations. "TRI has been extensively used by citizen groups, government agencies, and corporations to assess the potential health and environmental risks posed by chemical emissions and to target reductions where the opportunities are the greatest," Administrator Reilly said.

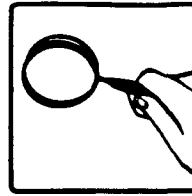
The laws passed in 15 states to prevent pollution or to reduce the use of toxic chemicals demonstrate the important role that the TRI can play in supporting the passage of new legislation. Many of these laws resulted from lobbying by local environmental and citizen action groups using TRI data from their regions. Use of specific TRI data has also been the basis for petitions filed by citizen groups in 10 states to designate additional bodies of water as "toxic hotspots" under the Clean Water Act. Such a designation triggers a requirement for tightened effluent limitations in discharge permits. Public involvement has also raised the awareness of manufacturing facilities about the toxic chemicals they release into the environment.

TRI Data to Be Released in Fall

EPA will publish an analysis of the data collected for the 1989 Toxics Release Inventory (TRI) in fall 1991. The report, *Toxics in the Community*, will provide detailed information about the scope and requirements of section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA), which established the inventory. It also will present a comprehensive analysis of the 1989 data, including comparisons with data from previous years.

To help the public use TRI more effectively, *Toxics in the Community* will provide examples of different ways the data can be used and various methods for analyzing the data. It will also report on activities carried out by federal and state governments, citizen groups, and other users of TRI data.

For more information about *Toxics in the Community*, contact Ken Mitchell, Economics and Technology Division (TS-779), Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460; (202) 260-3960.



EPA Activity

Proposed EPA Regulation To Affect Repair Shops and Fleet Operations

The Environmental Protection Agency has proposed another in a series of regulations implementing the requirements of the Clean Air Act Amendments of 1990. The latest proposal, titled Protection of Stratospheric Ozone, will affect many repair shops and other facilities that service their own fleet of vehicles.

A section of the Clean Air Act Amendments of 1990 includes requirements for reducing the emissions of and phasing out the use of ozone-depleting substances, such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). One specific requirement in the Amendments relating to the emissions of these substances provides for the certification of technicians and for equipment used in the servicing of motor vehicle air conditioners. In addition, the Amendments restrict the sale of small containers of CFCs. The proposed Protection of Stratospheric Ozone regulation implements these requirements.

The proposed regulation specifies that after January 1, 1992, no person who services a motor vehicle for consideration may perform any service on the air conditioner unless the equipment to service the air conditioner is properly used and approved as provided in the regulation and unless the person servicing the air conditioner has been trained and certified.

The training requirement by the proposed regulation can be conducted on-the-job, through self-study, or on-site with instructors, videos, or a hands-on demonstration. The training process must include a test that addresses:

- the recommended service procedures and standards applicable to the service and repair of motor vehicle air conditioners;
- anticipated future technological developments such as the introduction of

HFC-134a as a substitute for CFC refrigerants in new motor vehicle air conditioners;

- the environmental consequences of refrigerant release and the adverse effect of stratospheric ozone layer depletion; and
- the general regulatory requirements imposed by EPA to assure that technicians are familiar with the legal requirements regarding service.

The test must be sent to an independent testing authority for grading. Proof of certification in the form of a certificate, wallet-sized card, or display card must be provided to an individual successfully completing the test.

The regulation also limits the sale or distribution of any class I or class II substance suitable for use as a refrigerant in a motor vehicle air conditioner. The regulation stipulates that the substance cannot be sold or distributed to any person in a container with less than 20 pounds of the refrigerant unless the person is properly trained and certified or unless the person certifies that the cans are intended for resale only.

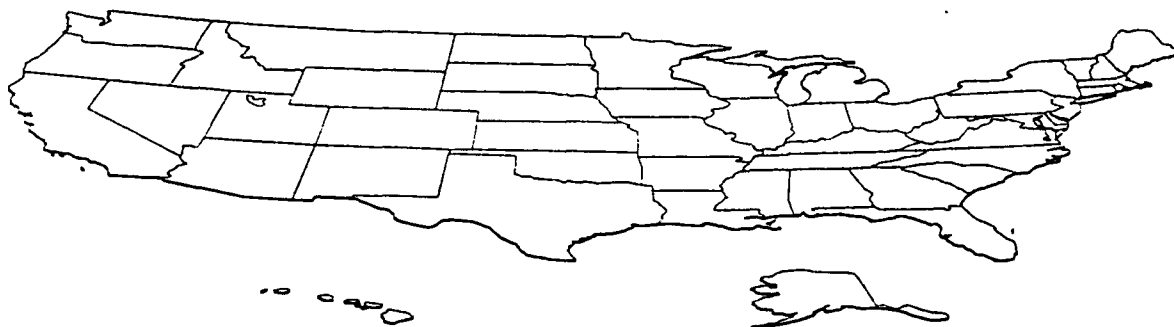
Under the proposed regulation, establishments servicing motor vehicle air conditioners

would be required to maintain the following records:

- A copy of each employee's certification;
- A copy of the equipment certification that must be submitted to the EPA noting that the establishment is properly using approved equipment to service motor vehicle air conditioners;
- Invoices of repair work indicating that service work involving refrigerant was performed; the date; the name, address, and telephone number of the vehicle owner; and the make, model, odometer reading and license plate number of the vehicle serviced;
- If the service establishment uses recovery only equipment, records of the amount of refrigerant reclaimed off-site, along with the name and address of the reclamation facility and the date of the transaction; and
- A record of the amount of refrigerant purchased and consumed each month.

For additional information regarding the proposal, see the September 4, 1991, **FEDERAL REGISTER**.

State Activity



CALIFORNIA

CAL-OSHA Proposes Additional S.B. 198 Regulations

The California Division of Occupational Safety and Health has proposed additional regulations implementing S.B. 198. Senate Bill 198 (Stats. 1989, Chapter 1369) sets forth the requirement that every employer establish,

implement and maintain an effective "Injury Prevention Program." (See July 1991 issue of the *Industrial Safety Report* for an additional discussion of S.B. 198.) Senate Bill 198 provides for the inclusion of employer and employee occupational safety and health committees within an effective injury prevention program.

Current regulations implementing S.B. 198 provide that an employer who elects to use a safety and health committee will be "...presumed to be in substantial compliance" with the new law if certain requisites are met.

The new regulations now being proposed by CAL-OSHA apply to those employers electing to establish a safety and health committee in order to satisfy the requirements for an injury and illness prevention program. The new regulations will require every safety and health committee to be approved by the "CAL/OSHA Consultation Service" for the Division. Specific criteria are set forth which must be provided to the Consultation Service for the evaluation process.

Where it appears, based on the information provided, that the safety and health committee will fairly and effectively communicate and address the safety and health concerns of all affected employees, the committee will be approved, subject to the right to perform an on-site inspection as a condition precedent to approval of the safety and health committee.



FLORIDA

Expansion of Florida Substance List Proposed

The Florida Department of Labor has proposed an amendment which would add 221 substances to the Florida Substance List. The Florida Substance List, which already contains over 1400 substances, is the list of toxic substances that are subject to the provisions of the hazard communication and community right to know standards in the state. The 221 substances are being added to the list at the request of the Toxic Substances Advisory Council which is responsible for assisting the Secretary of Labor in reviewing and preparing the list of toxic substances.

The effect of the addition of the substances, should the proposal be finalized, would be to require any manufacturer, importer, or employer who produces, distributes, uses, or stores the additional substances to comply with the requirements of the hazard communication and community right to know standards. The requirements include maintaining material safety data sheets, posting notices, educating employees, and notifying certain agencies of the the presence of the materials.

ACCIDENT REPORT FATAL FACTS

Brief Description of Accident

Two employees were doing remodeling construction and were building a wall. One of the workers was killed when he was struck by a nail fired from a powder-actuated tool. The tool operator, while attempting to anchor plywood to a 2" x 4" stud, fired the tool. The nail penetrated the stud and the plywood partition prior to striking the victim.

Inspection Results

As a result of its investigation, OSHA issued citations for three serious violations. Had employees been trained in the use of powder-actuated tools and had precautions been taken to prevent the nail from passing through the wall, the accident probably would not have occurred.

CTL023406

ACCIDENT SUMMARY

Accident Type	Struck by Nail
Weather	N/A
Type of Operation	Remodeling
Crew Size	2
Collective Bargaining	No
Competent Safety Monitor on Site?	No
Safety and Health Program in Effect?	No
Was the Worksite Inspected Regularly by the Employer?	No
Training and Education Provided?	No
Employee Job Title	Maintenance
Age/Sex	32/M
Experience at this Type Work	1 Day
Time on Project	1 Day



CFR 1926.302(e)(8)].

3. Operators and assistants using powder-actuated tools must be safeguarded with eye protection [29 CFR 1926.302(e)(12)].

Sources Of Help

- OSHA General Industry Standards [29 CFR Parts 1900-1910] and OSHA Construction Standards [29 CFR Part 1926] which together include all OSHA job safety and health rules and regulations covering construction.

- OSHA-funded free consultation services listed in telephone directories under U.S. Labor Department or under the state government section where states administer their own OSHA programs.

- Courses in construction safety are offered by the **OSHA Training Institute**, 1555 Times Drive, Des Plaines, IL 60018, 708/297-4810.

Accident Prevention Recommendations

1. Employees using powder-actuated tools must be trained in the operation of the particular tool. [29 CFR 1926.302(e)(1)].

2. Driving into materials easily penetrated must be avoided unless materials are backed by a substance that will prevent the nail from passing completely through and creating a flying missile hazard on the other side [29

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