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Hazardous Chemicals in the Workplace

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In almost all workplaces (other than business offices) employees use some chemical that may be harmful to the body. The Occupational Safety and Health Administration (OSHA) requires every employer to evaluate the hazards present on the workplace, to develop written exposure control plans, to provide engineering controls and personal protective equipment, and to train employees. This includes the presence of hazardous chemicals in the workplace.

In March, 2012, OSHA released its new Hazard Communication Standard (HCS), which will be phased in over the next three years [1]. The new Standard still requires manufacturers or importers to make certain determinations about the chemicals they produce or import, to label the chemical containers and to provide documents for downstream customers. Employers are still required to list their workplace chemicals, ensure proper labeling, make safety data sheets available, and train employees. These requirements have not changed from the 1994 revision. Chemicals that were exempted from most requirements then are still exempt; this includes general consumer products and business office products used according to the manufacturer's intended use and in similar volumes and frequency as used in the home or the business office.

The purposes of this new standard, which had been under development for some time, are

- To comply with the Globally Harmonized System (GHS) and to
- Improve employee safety by providing better information about the chemicals.

The first deadline for compliance with the new standard is December 1, 2013, and requires employees to train employees on understanding the new labels and new Safety Data Sheets (SDS). Deadlines for the new labeling and safety data sheets come later, but OSHA anticipates that manufacturers and importers will begin using them sooner.

The new Safety Data Sheets must be distributed by manufacturers by June 1, 2015. These SDSs replace the old Material Safety Data Sheets, which have been in effect for decades. Employers have complained to OSHA for many years that the information on the MSDSs was not reliable, and the documents did not meet international needs. The MSDSs had no standard format, which made the task of finding needed information difficult, and did not always include critical information needed for employee safety.

Of particular interest to employers and employees will be the new requirement for SDSs to be in a standardized format, making finding the needed information easier, especially in an emergency. The required sequence of information is as follows:

Section 1- Product identifier

Section 2- Hazard(s) identification, including hazards associated with the chemical and required label elements

Section 3- Composition/information on ingredients, including information on chemical ingredients and trade secret claims

Section 4- First aid information, including symptoms/effects (acute or delayed); required treatment

Section 5- Fire-fighting measures: suitable extinguishing techniques, equipment; chemical hazards from fire

Section 6- Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup

Section 7- Handling and storage

Section 8- Exposure controls/personal protection: includes exposure limits and personal protective equipment

Section 9- Physical and chemical properties

Section 10- Stability and reactivity

Section 11- Toxicological information

Section 12 – Ecological information*

Section 13- Disposal considerations*

Section 14- Transport information*

Section 15- Regulatory information*

Section 16- Other information, which includes the date of preparation or last revision

* Note: Since other Agencies regulate this information, OSHA will not be enforcing Sections 12 through 15.

December 1, 2015, is the deadline for the new labeling requirements. By that date, all manufacturers and importers must meet the new requirements for all containers shipped to downstream customers. Under the previous standard, the manufacturer was required to evaluate the hazards of the chemicals they produced and to label the containers with the identity of the hazardous chemicals, appropriate hazardous warnings and the name and contact information for the manufacturer, importer, or other responsible.

"Classification" of chemicals is a new requirement and is the responsibility of the manufacturer or importer. Classification requires new definitions, so the list of definitions associated with the Standard has changed. Some have been deleted and others added.

After the manufacturer or importer has classified the chemicals they produce or import, they develop labels with the following elements:

1. Identity of the chemical, which may be the chemical name, code, number, batch number or other identifier chosen by the manufacturer.

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Health Hazard ▪ Carcinogen ▪ Mutagenicity ▪ Reproductive Toxicity ▪ Respiratory Sensitizer ▪ Target Organ Toxicity ▪ Aspiration Toxicity	**Flame** ▪ Flammables ▪ Pyrophorics ▪ Self-Heating ▪ Emits Flammable Gas ▪ Self-Reactives ▪ Organic Peroxides	**Exclamation Mark** ▪ Irritant (skin and eye) ▪ Skin Sensitizer ▪ Acute Toxicity ▪ Narcotic Effects ▪ Respiratory Tract Irritant ▪ Hazardous to Ozone Layer (Non-Mandatory)
Gas Cylinder ▪ Gases Under Pressure	**Corrosion** ▪ Skin Corrosion/Burns ▪ Eye Damage ▪ Corrosive to Metals	**Exploding Bomb** ▪ Explosives ▪ Self-Reactives ▪ Organic Peroxides
Flame Over Circle ▪ Oxidizers	**Environment (Non-Mandatory)** ▪ Aquatic Toxicity	**Skull and Crossbones** ▪ Acute Toxicity (fatal or toxic)

Figure 1: Hazard communication standard pictograms and hazards.

2. Signal word, either "Warning" or "Danger," with "Danger" being more hazardous than "Warning."

3. Hazard statement(s) that describe the nature of the hazard of a chemical, including, where appropriate, the degree of hazard.

4. Precautionary statement(s), which is a phrase that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous chemical or improper storage or handling.

5. Name, address and phone number of the chemical manufacturer, distributor, or importer.

6. Pictograms, which are diagrams consisting of a black graphic on a white background surrounded by a red diamond. The colors are mandatory! Nine pictograms have been approved (Figure 1).

June 1, 2016, the final deadline, circles back to the employer, with the new Standard requiring employers to "Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards." This means an updated written exposure control plan, labeling and employee training [2]. The good news is that employers may continue using the same labeling system currently in use, provided that all other required information is available to employees.

During this phase-in period, employers, manufacturers, and importers may continue using the compliance program currently in effect or implement an updated one. However, employers should take note and start employee training now. The word on the street is that beginning with January 2014, OSHA inspectors will be quizzing employees on the meaning of the pictograms.

References

1. Hazard Communication Standard CFR 1910.1200-OSHA.

2. Side-by-Side Comparison of Proposed Hazard Communication Standard and Existing Rule from OSHA's website.