CONNECTICUT DEPARTMENT OF LABOR
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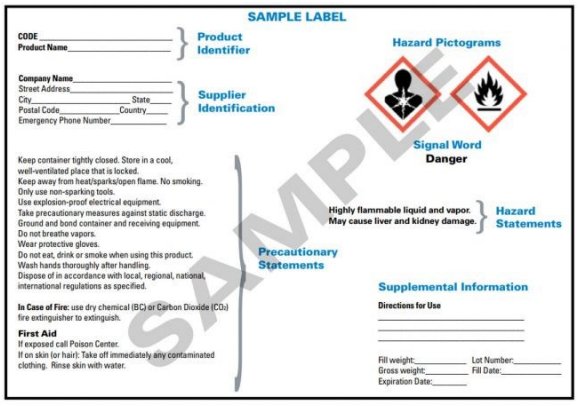
How Have Workplaces Used Hazcom 2012 to Enhance their Hazard Communication Programs?

In 2012 OSHA updated their Chemical Hazard Communication Standard (1910.1200) to align with the Globally Harmonized System for the Classification and Labeling of Chemicals (GHS). OSHA's goal was to ensure that hazardous chemicals were categorized and classified with consistent hazard warnings. In addition, OSHA wanted to make certain that employees' "Right to Know" about the hazards of chemicals was supplemented by their "Right to Understand" these hazards. To achieve this goal the new Hazard Communication regulation (Hazcom 2012) required chemical manufacturers and importers to use a standardized format for Safety Data Sheets (SDSs). In addition they were to provide enhanced labels on chemical containers that included a signal word, pictograms, hazard statements, and precautionary statements that corresponded to each hazard class and category of the chemical. Six years later, how have employers used Hazcom 2012 to improve their employees' ability to recognize *and* understand the chemical hazards in the workplace?

Written Programs and Chemical Inventories: Employers have updated their written hazard communication programs. Hazcom 2012 gave many employers the opportunity to ensure that their written program's list of hazardous chemicals represented the most current products in use. Before replacing outdated Material Safety Data Sheets (MSDSs) with SDSs many employers streamlined and updated their chemical inventories.

Labels: Chemical manufacturers and importers are required to provide labels on shipped containers. At this point, most employers and employees are accustomed to seeing pictograms and hazard statements on incoming containers of hazardous chemicals. The labels provide a concise summary of the hazardous properties of the products. Employees with low literacy or limited English language skills have used the pictograms to recognize the hazardous properties of a chemical.

***Workplace Labels*:** When employers transfer a chemical to a secondary container they are required to label the secondary container with the product identifier and general information concerning the hazards of the chemical. Some employers have been labeling these containers with pictograms and hazard statements. Other employers have elected to use third party systems (eg: NFPA, HMIS) to accomplish this goal. It is important to remember that Hazcom 2012 pictograms and hazard statements inform workers about a range of physical hazards in addition to the acute and chronic health hazards of chemicals. Systems such as the NFPA 704 "fire diamond/safety square" provide basic information on the flammability, instability and acute health hazards of chemicals. Employers can choose to use third party



systems to label secondary containers as long as their workers have immediate access to the specific information about the physical and health hazards of the chemical.

Safety Data Sheets: Employers have been replacing their Material Safety Data Sheets (MSDSs) with GHS compliant Safety Data Sheets (SDSs) and they are continuing to ensure that these Safety Data Sheets are readily accessible to employees. Most employers report that it has become much easier to locate SDSs by either calling the manufacturer/distributor or by searching for the SDSs online. There appears to be universal appreciation for the SDSs' standardized format and consistent hazard classifications.

Training: Employers were required to train their employees on the new label elements and on the standardized SDS format by the end of 2013. Many employers used this requirement as an opportunity to re-train their employees on all of the elements of their hazard communication programs.

Employees have commented that the best training programs are site specific and "hands on". Employers with "hands on" training ask employees to select a product container in their work area and identify its label elements. They then ask the employees to locate the SDS for this product. Together, they can review the standardized SDS format and discuss the additional

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Hazard Communication, *Cont.*

information the SDS can provide. Because pictograms and hazard statements are associated with *potential* hazards, employers should be sure to highlight the precautionary measures that have been taken to protect employees from exposures that could cause harm.

Successful worker training programs have addressed simple ways in which labels and SDSs can be used to identify chemicals of concern. For example, when employees are trained on three concepts:

1. Products with the signal word "Danger" are more hazardous than products with the signal word "Warning";
2. The GHS uses a classification system to rank hazards. The classification numbers can be found on the SDS. Within each category, 1 is the most severe hazard and 4 is the least severe hazard and;
3. Three pictograms are associated with health hazards: The Health Hazard pictogram (chronic/ long hazards), the exclamation point pictogram (acute/short term hazards) and the skull and cross bones pictogram (acute toxicity).

They can see that Product 1 is more hazardous than Product 2- (see table below).

In Summary, Hazcom 2012 has provided employers with valuable tools which have improved their employees' ability to recognize and understand the chemical hazards in the workplace.

Hazard Identification	Product 1	Product 2
Signal Word	Danger	Warning
Pictograms		
Hazard Statements	May Cause Cancer May Damage Fertility May Be Harmful if Inhaled May Cause Respiratory Irritation	May Cause Drowsiness/Dizziness May Cause Respiratory Irritation
Classification Categories	Hazard statements with Category 1 and 3 classifications	Hazard statements with Category 3 classifications

Reminder to Protect Workers from the Dangers of Carbon Monoxide

With the cold weather approaching, it is important to be reminded of the serious and sometimes fatal effects of carbon monoxide poisoning as well as the necessary precautions to protect employees. The Occupational Safety and Health Administration (OSHA) reports indicate that worker fatalities related to carbon monoxide poisoning continue to occur every year, generally while using fuel-burning equipment and tools in enclosed or semi-enclosed spaces. This is especially the case in colder climates when employees may work in an enclosed space with doors, windows, and outdoor air dampers closed, resulting in inadequate ventilation.

What is carbon monoxide?

Carbon monoxide is a toxic, colorless and odorless gas which is predominantly produced as a by-product of the incomplete combustion of carbon-containing materials. Carbon monoxide (CO) can be produced from the burning of fuels such as oil, gasoline, propane, kerosene, coal, wood, or natural gas. Forges, blast furnaces and coke ovens produce CO, but one of the most common sources of exposure in the workplace is the internal combustion engine.

How does carbon monoxide affect the body?

Carbon monoxide interferes with the oxygen-carrying capacity of blood, reducing the transport of oxygen to the brain, heart, and other vital organs. It is often referred to as the "silent killer" as it can overcome a person in a matter of minutes without warning. Initial symptoms of CO poisoning may include headaches, fatigue, dizziness, shortness of breath, or nausea. Prolonged or high exposures may worsen the symptoms and cause tightness in the chest, vomiting, confusion, muscle weakness, and loss of consciousness. Severe carbon monoxide poisoning can lead to neurological damage, coma, and even death. Symptoms vary widely from person to person and may occur sooner in young children, the elderly, and those with lung or heart disease.

What are the OSHA limits for carbon monoxide exposure?

The Federal OSHA Permissible Exposure Limit (PEL) for carbon monoxide is 50 parts of CO per million parts of air (ppm), averaged over an 8-hour time perios. Connecticut OSHA has established a PEL for CO at 35 ppm, as a 8-hour time –weighted average and a ceiling limit at 200 ppm.

What are some sources of carbon monoxide?

Sources of carbon monoxide can include anything that uses combustion to operate. Common sources in the workplace include fuel burning equipment, tools, and appliances such as: furnaces, gasoline-powered generators, power washers, propane-powered heaters, gas water heaters, forklifts, gasoline-powered tools, compressors, pumps, and welding equipment.

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Reminder to Protect Workers from the Dangers of Carbon Monoxide Poisoning

Carbon monoxide can accumulate rapidly to high and even fatal levels when fuel-powered equipment and tools are used in an enclosed or partially enclosed space with inadequate ventilation. Over the years, OSHA has investigated many incidents involving carbon monoxide poisoning including those described below:

"18 workers endangered by exposure to deadly levels of carbon monoxide gas." OSHA investigators determined that employees were testing a commercial industrial parts washer powered by two natural gas heaters. Employees were working inside the building. The buildings doors were closed because of cold temperatures, this limited ventilation. -November 2014

"Two Employees Lose Consciousness From Carbon Monoxide Poison." One employee recovered from the incident and one died. An employee was overcome by carbon monoxide after climbing down an extension ladder into the basement of a new construction residential home to check on a generator that had been placed in the basement. A second employee was overcome by CO when he went in the basement to check on the first employee. -December 2016

"Laborer Dies of Carbon Monoxide Poisoning When He Operates a Gasoline-Powered Concrete Saw Indoors." The employee was working alone in a vacant store in a shopping mall. He died of carbon monoxide poisoning as a result of operating a gasoline-powered, walk-behind concrete saw in an enclosed space. At the time of the incident, the space was not mechanically ventilated and had no natural ventilation. The victim was found lying face up, wearing an air-purifying respirator with organic vapor cartridges which offered no protection against carbon monoxide. -February 2017

"Employee Is Killed From Exposure To Carbon Monoxide." A maintenance worker at a mobile home park was killed by asphyxiation from exposure to carbon monoxide as a result of operating a gas powered pressure washer to assist in cleaning a laundry room floor. -April 2017

"Worker Operating Power Saw Is Poisoned By Carbon Monoxide." A construction laborer collapsed after working for forty minutes, operating a gasoline-powered cutoff saw inside a plastic enclosure. -August 2017

"Employee Is Exposed To Carbon Monoxide Vapors." A stock & inventory clerk experienced dizziness, nausea, lightheadedness, sweating and a fainting episode. He was "counting and tagging freight around Bay #8 through #10 in a 30,000 square foot area where four powered industrial trucks were in operation." -August 2017

"Employee Clearing Drain Is Poisoned By Carbon Monoxide." An employee who worked for a plumbing company lost consciousness after operating a gas-powered hydrojet machine at a floor sink. -September 2017

How can employers reduce the risk of carbon monoxide poisoning in the workplace?

- Identify potential sources of carbon monoxide in the workplace.
- Install an effective ventilation system that will remove CO from work areas.
- Maintain equipment and appliances that can produce CO in good working order. (e.g. water heaters, space heaters, powered industrial trucks and cooking ranges)
- Ensure heating systems are properly vented and well maintained.
- Avoid the use of fuel-burning equipment in enclosed or partially enclosed spaces with inadequate ventilation.
- Prohibit the use of gasoline-powered tools and engines, such as powered washers, heaters, and forklifts, in poorly ventilated areas.
- Consider switching from gasoline-powered equipment to equipment powered by electricity, batteries, or compressed air if they can be used safely.
- Install fixed carbon monoxide detectors with audible alarms in workplaces where potential sources of carbon monoxide exist or provide employees with calibrated personal CO monitors with audible alarms when working in areas where they may be exposed to CO.
- Educate workers to recognize conditions that can lead to CO poisoning. Ensure that employees understand that all fuel-powered tools can emit carbon monoxide and that they represent a hazard when used in an enclosed space.
- Train employees to recognize the signs and symptoms of carbon monoxide poisoning. Inform employees of the need to leave the area and get to an area of fresh air right away if symptoms occur, and to promptly report any such symptoms to their supervisor.

Carbon Monoxide Detectors

Carbon monoxide detectors are designed to sound an alarm upon the detection of an elevated level of carbon monoxide. The sensitivity of detectors varies with some detectors sounding an alarm at persistent, low levels while others are designed to alarm at higher dangerous levels. Information on the sensitivity of a detector can generally be found with the product information. Carbon monoxide detectors can be hard-wired, battery-operated, or plugged into an outlet with a battery backup in case of a power outage. Some models incorporate a visual display of the CO concentration present. It is important to read and follow the manufacturer's instructions when installing a CO detector, and to understand the meaning of an alarm signal. Manufacturer's instructions should also be followed for testing and maintaining the detector (i.e. checking for proper functioning, replacing batteries, and replacing sensor/detector as recommended). For exposure monitoring in the workplace, consider the use of a carbon monoxide dosimeter which provides real time measurements, calculates and records time-weighted average exposures and peak exposures, and is equipped with audio and/or visual alarms.

Fatality & Casualty Reporting

State & Town: CONN-OSHA (860) 263-6946 (local) or 1-866-241-4060 (toll-free)
Private Employers: Report to Federal OSHA at 1-800-321-OSHA(6742)

Hazard Corner…Rifle, Colorado man dies after accidental worksite poisoning

A metalworker died Aug. 6, 2016, two days after accidentally ingesting a highly toxic liquid he thought was an energy drink at an Old Snowmass work site. The Occupational Safety and Health Administration is investigating the job-site safety practices of Pitkin Iron, the Glenwood Springs company where Frank Gabossi III worked. Gabossi, a longtime resident of Rifle, was 53. On Friday, Aug. 4, he and a colleague went to a home on Snowmass Creek Road to work on a metal staircase, said Ron Ryan, investigator at the Pitkin County Sheriff's Office. At around noon, Gabossi walked back to their truck and picked up a Gatorade bottle containing Antique Black. The bottle still had the drink label on it, and it was not marked as containing the agent, used to age metal. The substance, which is bright blue, contains Selenous acid, which is highly corrosive and for which there is no antidote, Ryan said. Gabossi apparently swallowed half a mouthful before spitting out the other half. He immediately knew what had happened and told his co-worker, who drove him to Valley View Hospital. He was airlifted to St. Mary's Hospital in Grand Junction, where he died. Gabossi's death is considered an accident, and no criminal charges are planned, Ryan said. The men put the liquid into the smaller bottle for convenience; it is usually stored in five-gallon drums on the grounds of the Glenwood company. Selenous acid, which Ryan said is also common in "gun bluing" agents found in many homes, devastates the human body at the cellular level. Cells can't perform normal functions related to energy production and expelling waste, leading to organ failure.

This article was taken from the Aspen Times https://www.aspentimes.com/news/rifle-man-dies-after-accidental-worksite-poisoning/#.W2mTnkCNAdM.email

CONN-OSHA~ Training Update...

Powered Industrial Trucks ***November 7, 2018 from 10:00 a.m. to noon*** This 2-hour workshop will cover safe work practices, methods of providing formal and practical training, and tools for operator evaluation.

Safe Driving – Get There Safely EVERY Time ***December 12, 2018 from 10:00 a.m. to noon*** Work-related vehicle crashes are the leading cause of occupational fatalities according to the U.S. Dept. of Labor. The goal of this session is to increase awareness of the need for, and the benefits of safe driving.

OSHA Recordkeeping ***January 17, 2019 from 9:00 a.m. to noon*** This interactive session will make you knowledgeable of the rules and ensure confidence that you have properly recorded and reported occupational injuries and illnesses, including how to fill out the OSHA 300 Log of Work-Related Injuries and Illnesses accurately and correctly.

Work Place Violence ***February 13, 2019, from 10:00 a.m. to noon*** This workshop is designed to make you more aware of some of the issues related to the workplace and to provide tools to help manage, defuse and prevent it.

Trenching & Excavation ***March 7 2019 from 10:00 a.m. to noon*** This workshop will provide an overview of 29 CFR 1926.650-652 excavations, including the role of the competent person. The session is designed to assist participants in identifying hazards associated with excavations and related activities.

Breakfast Roundtable This discussion group meets the third Tuesday of every month from 8:15 am to 9:45 am. Pre-registration is required. Visit our web page for more information: http://www.ctdol.state.ct.us/osha/Breakfast/index.htm To be placed on the e-mail distribution list, contact John Able at John.able@ct.gov

Classes are free and are held at 200 Folly Brook Boulevard, Wethersfield, CT in Conference Room A/B (unless otherwise noted). To register, contact Catherine Zinsser at catherine.zinsser@ct.gov Pre-registration is required. A Photo I.D. is also required to allow entry into a public building. For more training information, visit the CONN-OSHA web site www.ConnOsha.com