



Chemical Safety

In today's workplace, chemicals play an integral role in nearly every manufacturing process. While some chemicals can be benign, others can pose hazards to an employee's health. This reliance on such substances places those who work in the manufacturing sector at an increased risk for exposing themselves to these chemicals. A study from the California Policy Research Center estimates that workers suffer more than 190,000 illnesses and 50,000 deaths annually related to chemical exposures.

Chemical hazards pose a wide range of health hazards, such as irritation, sensitization and carcinogenicity, and physical hazards, such as flammability, corrosion and reactivity. Chemical exposures also have been linked to cancers and lung, kidney, skin, heart, stomach, brain, nerve and reproductive diseases. At United Heartland, we have seen the following injuries and illnesses as a result of chemical exposures:

- Dermatitis (rash, blisters, etc.)
- Burns
- Eye and face trauma
- Respiratory issues
- "Flu-like" symptoms (nausea, headache, dizziness)

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Remember These Tips:

- **Spill Containment:** In the event of a chemical spill, containment measures must be in place to control the substance and limit the number of employees exposed.
- **Storage:** When storing chemicals in the same place, make certain that all products are compatible with each other to avoid a potential reaction if accidental mixing were to occur.
- **Emergency Response:** To ensure a prompt evacuation, practice and evaluate emergency response procedures.

Protecting Your Workforce

To protect your workforce from chemical exposures, consider implementing the following control measures:

Elimination/Substitution

- **Elimination:** Considered the most effective control approach, elimination involves completely removing the hazardous chemical from all processes and products within the workplace.
- **Substitution:** The act of transitioning hazardous chemicals to safer alternatives. When implementing this control, evaluate all options to avoid replacing one hazard with another.

Engineering Controls

- **Ventilation:** General dilution ventilation and local exhaust ventilation can be used in the workplace to reduce chemical fumes, thus reducing the likelihood of airborne health hazards.
- **Isolate/Enclose:** To minimize the risk of employee contact with hazardous chemicals, consider relocating or enclosing processes that involve the use of such substances.

Administrative Controls

- **Perform Hazardous Work During Off Hours:** When maintenance operations involve the use of hazardous chemicals, consider performing the work off hours to limit the number of those exposed.
- **Safe Work Practices:** Educate and train employees on how to safely handle and recognize hazardous chemicals. Other important training topics include: emergency preparedness, housekeeping procedures, personal hygiene, etc.

Personal Protective Equipment (PPE) Hazard Assessment

As a requirement under OSHA 1910.132, assess your workplace to determine if chemical hazards exist. If so, and the above-mentioned controls are not feasible, select and provide the appropriate form of PPE for your workforce. To help you in this process, United Heartland has developed a PPE/Hazard Assessment Program. Contact your loss control representative for more information.

It is widely recognized that the most effective method to prevent the adverse health and safety exposures in the workplace is to eliminate the hazards at the source, before applying other less effective forms of protection. This principle, the Hierarchy of Controls (as listed above), looks to apply the most effective method of control.

From a chemical safety standpoint, efforts should be made to identify a safer or less toxic chemical that can replace a more hazardous or toxic chemical that is currently used in production. Benefits of substitution would be improving worker health and safety, achieving compliance with laws and regulations specific to chemical safety, and creating safer products for consumers and the environment.

OSHA Toolkit - 7 Steps for Transitioning to Safer Chemicals:

OSHA provides additional information on this topic here: Transitioning to Safer Chemicals: A Toolkit for Employers and Workers (https://www.osha.gov/dsg/safer_chemicals/)

For More Information:

To learn more about how to protect your workforce from hazardous chemicals, visit the links below:

- CDC Chemical Safety: (www.cdc.gov/niosh/topics/chemical-safety/)
- NIOSH Pocket Guide to Chemical Hazards: (www.cdc.gov/niosh/npag/)
- OSHA Occupational Chemical Database: (<https://www.osha.gov/chemicaldata/>)
- Chemical Safety Library: (www.thesafetylibrary.com/lib/chemicalsafety/)

Additional Training Resources

Training is an important part of any safety program, and our staff can help by reviewing your training needs and offering consultation to improve its effectiveness. As outlined below, we also have video and online training resources available for customers who wish to complement their current training systems. Contact your United Heartland Loss Control representative to discuss your current training needs.

The Lezage Training Center provides many safety training topics which can be utilized as individual training or presented to a group as a group safety training program. The training presentation can be completed in approximately 30 minutes, and can be paused and restarted to allow for discussion points.

<http://afi.lezage.com/servreg01.cfm?DP=7>

Lezage Online Safety Courses (Free, streaming video only)

- Compressed Gases
- Confined Space Entry
- Emergency Action & Fire Prevention
- Eye Protection
- Hand Protection
- Hazard Communication – GHS and Your Right to Know
- Hazard Communication – Health Care Workers
- Hydrogen Sulfide Safety
- Laboratory Safety
- Personal Protective Equipment
- Process Safety Management

CLMI programs allows you access to CMLI Blue Prints® Safety Programs and Videos at a discounted rate. You keep the programs and videos; there is nothing to return. Full CLMI Programs include a binder, training presentation, written program template and videos. To order any one of the programs log into our website at UnitedHeartland.com, select UH Client Services and select Safety Training.

CLMI Video/Training Programs (DVD or Streaming Video) (Cost: \$99+)

- Confined Space Entry
- Eye Safety
- Flammable Liquids Safety
- GHS Labels and Safety Data Sheets
- Hazard Communication: GHS Your Key to Chemical Safety
- OSHA's Lead Standard
- Personal Protective Equipment
- Respiratory Protection
- Spill Assessment



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