**Objective:** To communicate requirements for working with corrosive chemicals in the workplace.

**Understanding Corrosive Chemicals**

Corrosive chemicals, also referred to as caustics, are often used in cleaning products, paint strippers, and stains, as well as many other industrial applications. They can pose physical and health hazards, with the severity of the hazard depending on the level of corrosivity and the amount of exposure. They can be liquids, granules, powders, vapors, or gases. Corrosive chemicals are measured on the pH scale, which assesses how acidic or basic they are.

* **Acids** have a pH of less than 7. The closer to 0 on the pH scale, the stronger and more hazardous the acid is.
	+ Examples include sulfuric acid, hydrochloric acid, muriatic acid, and nitric acid.
* **Bases** have a pH of greater than 7. The closer to 14 on the pH scale, the stronger and more hazardous the base is.
	+ Examples include calcium hydroxide (lime), sodium hydroxide (caustic soda), and ammonium hydroxide.

Acids and bases can react violently with each other, releasing heat, vapors, and other dangerous by-products to reach pH neutralization. To avoid reaction, acids and bases must be kept separate and handled with caution.

**Requirements for Working with Corrosive Chemicals**

Employees who work with corrosives should have appropriate training to understand the hazards, including hazard communication training. **Note**: *This training short is not a substitute for hazard communication training.* Only work with corrosives when using proper hazard controls and wearing personal protective equipment (PPE). You are expected to follow your workplace’s hazard communication procedures, including having safety data sheets (SDSs) available and following any other applicable safety procedures based on the scope of work.

**Health Hazards**

Corrosives can cause severe skin and eye damage at the site of contact, such as dissolving skin tissue.

* Concentrated gases like ammonia can damage the skin, eyes, nose, mouth, and lungs from exposure to vapors.
* When inhaled, even dry, powdered bases can cause damage because they react with the moisture in your skin, eyes, and respiratory tract.

**Physical Hazards**

Corrosives can also damage equipment, property, and the environment. Corrosive materials react with certain metals and materials and degrade their integrity.

* Contact with corrosive liquids can be immediately damaging, but corrosive vapors can degrade surrounding containers, PPE stored nearby, or other work surfaces.
* Corrosive waste must be disposed of properly to prevent release into the environment, where it can negatively impact water quality.

**Emergency Response**

Emergency preparedness is key for managing spills, releases, reactions,
or exposures.

* The U.S. Occupational Safety and Health Administration (OSHA) requires eyewash stations and safety showers to be available for immediate use in areas where a person could be exposed to corrosives.
* Spill kits should be located at or near corrosive handling and storage areas. Remember: Only trained personnel should clean up spills.
* Follow the spill clean-up procedures in the SDS if safely able to do so.
* Reference the SDS for appropriate first aid procedures. Seek medical attention when necessary.
* Certain corrosive chemicals may require specialized first aid items, such as calcium gluconate gels for hydrofluoric acid exposure.

*If you see this hazard pictogram on a product’s label, it indicates that the product is corrosive.*

**Hierarchy of Controls**

When working with hazardous chemicals, like corrosives, it’s always best to consider how to eliminate or reduce exposure levels. Using the hierarchy of controls can help efficiently consider options for minimizing exposure. Consider these steps:

1. **Eliminate** the use of corrosives where possible. *Can you change an operation so that you don’t need the product?*
2. **Substitute** them for less hazardous alternatives. *Can you use a less hazardous product?*
3. **Engineer** them out of a process. Enclose the workspace, provide ventilation, etc. *What can you do to minimize or eliminate employee contact?*
4. **Use administrative controls** such as training, work rotations, and standard operating procedures to minimize exposure. *How can you change the work to reduce exposure? What information will be helpful to the worker?*
5. **Wear PPE** to protect from remaining hazards. *What is required to protect the worker?*

**PPE Considerations**

Your PPE needs may vary depending on the corrosive chemical you are using. Always check the SDS for specific exposure controls.

* Check the glove manufacturer’s chart to choose gloves with the appropriate chemical resistance. Pay close attention to breakthrough time when working with strong acids and bases.
* Contact with corrosives will degrade PPE over time. Inspect PPE before use and replace it as needed.
* Follow all requirements for use as set forth in OSHA’s Respiratory Protection Standard if required to wear a respirator.
* Choose appropriate eye, face, and body protection based on the corrosive chemicals and type of work you’ll be performing. Consider splashback, vapor exposure, and other hazards that may expose your skin, eyes, or extremities.

**Safe Handling & Storage Tips**

If you have any questions on safe corrosive chemical use, review your standard operating procedures and contact
your supervisor.

* Never store corrosives above eye level.
* Slowly add corrosives to water when mixing; never add water to corrosives.
* Segregate acids and bases during storage.
* Keep corrosive containers closed when not in use to avoid breathing the corrosive vapors.
* Always position dispensing nozzles, spouts, or other openings for decanting corrosives away from your face
and body.
* Be aware of hazardous vapors, especially when working in unventilated or confined spaces.

This form documents that the training specified above was presented to the listed participants. By signing below, each participant acknowledges receiving this training.

Organization: Date:

Trainer: Trainer’s Signature:

**Class Participants:**

Name: Signature:

Name: Signature:

Name: Signature:

Name: Signature:

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