
 CSN Procedure	Facilities Management
Category: Environmental Health and Safety	Effective Date: 08/01/2023
Corrosive Liquids: Storage, Handling, and Use 	

I. PURPOSE

The purpose of this procedure is to establish standards for the safe and effective handling, storage, and disposal of corrosive liquids at the College of Southern Nevada (CSN) in adherence to applicable health and safety standards.

II. SCOPE

This procedure pertains to all individuals, including faculty, staff, and students, who are engaged in handling or working with corrosive liquids as part of their job responsibilities or coursework at the CSN. The College of Southern Nevada has established policies to ensure that all areas at CSN campuses where corrosive chemicals are used or stored are subject to special precautions to minimize the risk of injury from the hazards of corrosive liquids. This guideline is intended to supplement existing Federal, State, or local applicable codes and provide specific requirements for the safe handling and storage of corrosive liquids.

III. DEFINITIONS

The term corrosive liquids include acids, bases, oxidizers, and other chemical classes that can cause severe damage to human tissues, metals, and other compounds like wood and concrete through chemical reactions. A few examples of corrosive liquids are hydrochloric acid, sulfuric acid, nitric acid, bromine, sodium hydroxide, and hydrogen peroxide.

IV. PROCEDURE

A. Responsibilities

1. Environmental Health & Safety (EHS)
 - a. Ensure administration of this procedure and conduct periodic reviews and updates.
 - b. Ensure compliance with environmental and safety regulations through the implementation of this procedure.
 - c. Periodically inspect corrosive liquid storage areas to ensure compliance with this procedure.
2. Managers and Supervisors
 - a. Ensure development, communication, implementation, and evaluation of proper work procedures and completion of required training in accordance with the programs identified herein.
3. Employees
 - a. Comply with the program methods described in this procedure and any subsequently developed program(s) and procedure(s).
 - b. Complete assigned safety training courses.

B. Training

Employees who handle, use, or store corrosive liquids must undergo training before being allowed to do so. The CAPE Learning Management System provides specific training on handling and storing corrosive liquids, which employees must take annually. New personnel with corrosive liquids handling responsibilities will also receive this training before they begin working with corrosive liquids.

C. Procedures

To ensure safe handling and storage of corrosive liquids, the following precautions must be followed:

1. Get Informed

- a. Ensure you are knowledgeable about the properties and potential hazards of the specific corrosive liquid you will be working with. You can usually find this information on the label or Safety Data Sheet (SDS).
- b. Familiarize yourself with all other relevant safety procedures, such as those related to fire prevention and emergency response and ensure that you follow them at all times.

2. Implement Hazard Controls

- a. Substitution - Seek a safer alternative where practical.
- b. Engineering/Ventilation Controls - When working with large quantities of corrosive liquids, use a fume hood or other appropriate ventilation system to prevent the release of harmful vapors.
- c. Administrative Controls - Purchase smaller quantities at the lowest concentration practical.
- d. Always use appropriate PPE.

3. Personal Protective Equipment (PPE)

- a. When handling corrosive liquids, always wear appropriate personal protective equipment (PPE), in addition to proper street clothing (long pants; long-sleeved shirt; closed-toed, non-perforated shoes), to minimize the risk of skin-contact exposure to chemicals. Depending on the chemical proper PPE may include:
 - i. Safety glasses/ Chemical splash goggles/ Tight-sealing safety goggles
 - ii. Appropriate chemical-resistant gloves
 - iii. Lab Coat
 - iv. Face protection shield.
 - v. Plastic or rubber aprons
- b. The protective characteristics of any protective clothing must be matched to the hazard. Refer to Section 8-Exposure Controls/Personal Protection of SDS to identify appropriate PPE.

4. Special Handling Procedures and Storage Requirements

- a. Take care when handling corrosive liquids and keep them away from your face and skin.
- b. When adding acid to water (never add water to acid), do so slowly and carefully to avoid violent reactions and splattering.
- c. Ensure that a safety shower and eyewash station are easily accessible in areas where corrosives are stored or used.
 - i. Emergency eyewash and shower equipment are required within 10 seconds of walking distance (approximately 55 feet) from the location of a hazard.
- d. Do not store corrosive chemicals above eye level.
- e. Store corrosive liquids in their original container or in a properly labeled secondary container.
- f. Store corrosive liquids in a designated storage cabinet, away from ignition sources and incompatible materials. Refer to Section 7-Handling and Storage of SDS for safe storage conditions, including any incompatibilities.
- g. Regularly inspect storage areas and containers for damage or leaks.
- h. Containers holding corrosive chemicals 5-gallons or greater should be stored in secondary containment to prevent accidental spillage.
- i. Ensure an appropriate spill kit with suitable absorbent material is readily accessible in storage and handling areas.
- j. Ensure SDSs are readily accessible in storage and handling areas.

5. First Aid

- a. In the event of contact between corrosives and any body tissue, especially the eyes:

- i. Flush the area of contact immediately with cool water for 15 minutes; remove contact lenses, if present and easy to do so.
 - ii. Remove all affected clothing.
 - iii. Seek medical assistance without delay.
 - b. Refer to Section 4 of SDS for First Aid Measures.

6. Spills and Leaks

In the event of a spill involving a corrosive liquid, follow the steps below:

- a. Immediately evacuate the area and alert others. If able, restrict access to the area.
- b. If you have been trained in proper chemical handling procedures and know the identity of the substance – put on appropriate protective gear and use spill cleanup materials to contain and neutralize the spill.
 - i. Review the SDS for the spilled material to assess the hazards and determine the appropriate level of protection.
 - ii. Prevent the product from entering drains to your best ability, if safe to do so.
 - iii. Follow Chemical Spill Response and Clean-up Procedures.
- c. If you are uncertain of the substance or are uncomfortable with the cleanup process, immediately evacuate the area and contact Environmental Health and Safety at (702) 651-7445 or University Police Services at (702) 895-3669 after business hours.
- d. Large Spills or Leaks (Greater than 5 Liters/1.32 Gallons)
 - i. In the event of a large spill or leak, notify the immediate supervisor and call EH&S at 702-651-7445 or UPD 702-895-3669, if after hours.
 - ii. Remain in the immediate vicinity, if safe to do so, until UPD or EH&S personnel arrive on-site and relieve you from duty.
- e. Any danger to life or safety must be reported to University Police Services immediately.

Note: This procedure is not comprehensive and should be supplemented with specific guidelines provided by your supervisor or lab instructor.

7. Disposal

- a. Corrosive liquids are hazardous wastes and must be disposed of in accordance with local, State, and Federal regulations.
- b. Do not dispose of waste by dumping it down a drain or discarding it in regular trash containers.
- c. Contact EHS for proper disposal of corrosive liquids.

V. AUTHORITY AND CROSS REFERENCE LINKS

CSN Laboratory Safety Manual

CSN Chemical Hygiene Plan

CSN Hazard Communication Plan

National Research Council (US) Committee on Prudent Practices in the Laboratory. Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards

NV OSHA Regulation for Emergency Eyewash and Shower Equipment: R069-20/ Z358.1-2014