Reed College Pool Chemical Spill Response Plan

July 2023

Table of Contents

1.0 Purpose and Scope

Pool chemical spills can occur when equipment fails or chemicals are being moved. Although there are systems in place to prevent them, chemical spills do still happen. This program provides steps on how to respond to pool chemical spills.

2.0 Responsibilities

2.1 Environmental Health and Safety (EHS)

EHS is responsible for policy development and review to ensure compliance with all applicable federal and state regulations and with best industry practice. EHS will provide technical guidance and assistance in training and methods of compliance. EHS staff are authorized to halt any unsafe work practices that are not in accordance with health and safety policies. EHS will be contacted by Community Safety when large spills occur and call the appropriate entity to respond to the spill.

2.2 Community Safety

Community Safety is responsible for responding to a spill that cannot safely be controlled by properly trained Sports Center staff. Community Safety is responsible for clearing and blocking off the area and evacuating the building, if necessary. Community Safety is responsible for contacting EHS to inform EHS on the spill situation.

2.3 Departments

Departments are responsible for providing a safe work environment for their staff by following posted health and safety policies and procedures.

2.4 Supervisors

Supervisors must identify and provide the necessary personal protective equipment required for working in hazardous situations. Supervisors must ensure that employees have proper training for the scope of their work.

2.5 Certified Pool Operator (Pool Manager)

The Certified Pool Operator (Pool Manager) is responsible for handling pool chemicals and responding to chemical spills based on the following policies and procedures. The pool manager is responsible for wearing the appropriate personal protective equipment when directed and following the procedures specified in this policy. The pool manager is responsible for the proper care, use, and inspection of their assigned personal protective equipment. They are expected to report any unsafe conditions to their supervisor.

3.0 Chemical storage

In order to maintain a safe work environment and prevent/minimize the spread of spills and the mixing of incompatible chemicals, all chemicals and equipment should be stored as follows:

- If utilizing shelving, personal protective equipment, safety data sheets, and emergency plans should not be stored below chemicals.
- There should be dedicated scoops/brooms/tools for chemicals to avoid incompatible chemical contact.
- If utilizing shelving, liquids should not be stored above dry chemicals.
- All labels must be intact and clear.
- Chemicals should not be stored directly on the floor. They should be in a tray, which can then be stored on the floor or a shelf.
- The storage area should be well ventilated.
- Incompatible chemicals must be stored separately (acids and chlorine products shouldn't be stored near each other, liquids away from solids).
- Open bags of chemicals should be stored in a sealable container.

4.0 Chemical Spills and Response

A minor (small) chemical spill is one that trained Sports Center staff is capable of handling safely without the assistance of safety and emergency personnel (approximately less than 1 gallon or 3.5 liters). A major (large) chemical spill requires active assistance from emergency personnel and should not be handled by Sports Center staff. All major spills or spills resulting in injury should be documented with the Accident/Incident Report Form and returned to HR as soon as possible.

4.1 Minor Chemical Spill

- If someone is injured and the scene is safe, attend to injured or contaminated persons, remove them from exposure, and call Community Safety at ext. 6666 (503-788-6666) or 911 as soon as possible. For minor spills, you only need to call Community Safety if someone is injured or contaminated.
- Alert and evacuate people in the immediate area of the spill.
- Mark off the spill area.
- If spilled material is flammable, turn off ignition and heat sources.
- If inside, open windows, if possible.
- Have trained personnel wearing appropriate protective equipment, including safety goggles, gloves, and closed toed shoes respond to spill. Wear a respirator if necessary.
- Avoid breathing vapors from the spill.
- Confine the spill to as small an area as possible.
- Do not wash the spill down the drain.
- Use appropriate spill kits/sorbents to neutralize corrosives and/or absorb spill. Collect contaminated materials and residues and place in a sealable container (use the spill kit bucket if spill kit was used). For powdered chemicals, use an uncontaminated broom to sweep chemicals carefully to avoid generation of dust and collect in a sealable container.

- Clean the spill area with water after doing the previous step.
- Label container with chemical information using chemical waste labels from EHS. This should be done as soon as possible after collecting material in the container.
- Bring SEALED AND LABELED container with spilled materials to Chemistry 211 for further processing.

4.2 Major Chemical Spill

- If someone is injured and the scene is safe, you can attend to injured or contaminated persons, remove them from exposure, and call Community Safety at ext. 6666 (503-788-6666) or 911 as soon as possible.
- Alert people in the area to evacuate. If a large spill (e.g. a drum of chlorine), evacuate the building. You may pull the fire alarm, if necessary, for evacuation purposes.
- Close doors to the affected area.
- If you have not already done so, call Community Safety at ext. 6666 (503-788-6666) immediately for assistance. Calling 911 is also appropriate.
- Post warnings to keep people from entering the area.
- Have a person available that has knowledge of the incident and pool chemicals to assist emergency personnel.
- Fill out an accident/incident form and return it to HR as soon as possible.

Appendix 1: List of Chemicals

Below is the list of chemicals used in pool facility with information about the chemical and use, as well as spill response for minor spills. All major spills should be handled using procedures listed above, except sodium bicarbonate and calcium chloride. Sodium bicarbonate and calcium chloride are considered non-hazardous and can be cleaned up and put in normal trash.

Muriatic Acid - used to lower pH and alkalinity

- Hydrochloric acid solution
- Use sodium bicarbonate from pool inventory to neutralize minor spills and collect contaminated materials in a sealable container
- Cannot be stored on the floor, put in bin or on drip tray
- Cannot be stored near oxidizers

Calcium Chloride - used to increase pool water calcium concentration (hardness)

- Can cause skin and eye irritation.
- Acute toxicity if ingested.
- Non-hazardous material, can be swept up with uncontaminated broom and thrown in regular trash. Sweep carefully to avoid generation of dust. Use dust respirator, gloves, and goggles if cleaning up spill.

Sodium Bicarbonate - used to increase alkalinity and increase pH

- Non-hazardous material, can be swept up with uncontaminated broom and thrown in regular trash. Sweep carefully to avoid generation of dust. Use dust respirator, gloves, and goggles if cleaning up spill.

Sani-clor Hypochlorite solution – chlorine solution used to kill bacteria/maintain safe levels for public use, 12.5% sodium hypochlorite

- Cannot be stored near muriatic acid.
- Use chemical spill kit to clean up minor spills.

Pool sanitizer (Fresh and Clean Swimming Pool Sanitizer 56) - Sodium Dichloroisocyanurate Dihydrate

- Corrosive, acutely toxic, oxidizer, toxic to aquatic life
- Causes severe skin burns and eye damage
- Store away from incompatible materials including muriatic acid, calcium hypochlorite (All Clear Chlor-right), sodium bicarbonate, sodium hypochlorite (Sani-clor).
- Do not add water to spilled material. Do not use floor-sweeping compounds to clean up spill. Use clean, dedicated equipment to pick up material.
- Avoid contact with other chemicals.
- Do not seal the waste container. Do not transport waste container. The material should be neutralized on-site to a non-oxidizing state.

Calcium hypochlorite (All Clear Chlor-right granulated)

- Oxidizer, could start fire or chemical reaction if mixed with other chemicals
- Toxic when inhaled
- Very toxic to aquatic life
- Causes severe skin burns and eye damage
- Cannot be stored near muriatic acid
- Use an uncontaminated broom to sweep chemicals carefully to avoid generation of dust and collect in a sealable container.