

GENERAL WRITTEN SOP- EMERGENCY EYEWASH, DRENCH HOSE AND SAFETY SHOWER MAINTENANCE, INSPECTION, TESTING AND RECORDKEEPING PROCEDURES

Background

The Occupational Safety and Health Standard, 29 CFR 1910.151 (c) requires, "Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use."

The National Research Council 2011 publication, "Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards", updated version, as referenced in the Occupational Safety and Health Standard, 29 CFR 1910.1450 Toxic and Hazardous Substances, Appendix A, identifies the requirement for each laboratory handling toxic chemicals be equipped with an eyewash and an easily accessible drench-type safety shower. The referenced standard continues by stating, "Eyewash fountains should be inspected at intervals of not less than 3 months and other safety equipment inspected regularly."

The American National Standard for Emergency Eyewash and Shower Equipment, ANSI Z358.1-2009 requires that, "Plumbed equipment shall be activated weekly for a period long enough to verify and ensure that flushing fluid is available." As described, it also justifies this activity by stating that, "the intent is to ensure that there is a flushing fluid supply at the head of the device and to clear the supply line of any sediment build-up that could prevent fluid from being delivered to the head of the device and minimize microbial contamination due to sitting water."

NOTE: Emergency flushing equipment is secondary to a planned and well executed chemical hygiene and emergency plan for each laboratory. Every effort must be made to control exposure through training, personal protective equipment and work practices.

Policy

It is the policy of The Citadel, Department of Chemistry that emergency eyewash and safety showers or similar flushing equipment be installed and maintained as described in the OSHA standard and NRC "Prudent Practices" as outlined above. These installations shall be in near proximity to, or within the immediate area, where an employee, staff or student could have an exposure to the skin, eyes, face or body due to a physically hazardous material. This equipment may include eyewash stations, emergency drench-type showers and drench hoses. Where the installation of plumbed eyewash and shower equipment is impractical, drench hoses, portable eyewash single use bottles or gravity-fed eyewash units are acceptable as long as they are pre-approved by The Citadel Chemistry Department and employees are trained to understand that the use of this equipment is only to get them to a source of emergency plumbed flushing equipment. **It is not necessary to use a buffered solution or deionized (DI) water in any portable emergency flushing unit. Tepid potable water is sufficient; just assure adequate flooding of the skin or eyes is performed.**

Responsibility

The Citadel's Director of *Environmental Health and Safety* and *Laboratory Safety Manager* shall

be responsible for assuring the compliance with this document by all affected areas in the Chemistry Department. In addition, any process, device, or activity related to the preventive or routine maintenance of emergency flushing equipment must be pre-approved by the Director of Environmental Health and Safety.

The Department Head is responsible for assuring that emergency flushing equipment within their department is maintained and is functioning properly. It is recommended that each unit supervisor, instructor, or lab manager be designated to assure the status of this equipment in accordance with the guidelines listed below.

Lab managers, instructors, unit supervisors are responsible for:

- A. assuring that problems related to the maintenance or function of emergency flushing equipment are promptly reported to the department lab manager, and/or directly to Facilities and Engineering (as applicable) or by WebTMA (see instructions on system use at: <http://www.citadel.edu/root/ofe-request-work>);
- B. assuring that eyewash stations and drench hoses in their designated areas are activated weekly and operation noted on the Activation log available attached to or posted in a conspicuous location in the proximity of the emergency flushing equipment;
- C. coordinating with Facilities and Engineering and EHS to ensure the eyewash stations, drench hoses and emergency shower(s) in their designated areas are inspected and activated at least annually by Facilities and Engineering and operation noted on the tag(s) attached to the emergency flushing equipment
- D. assuring that in their respective areas where portable eyewash single use bottles or gravity-fed units are used they are inspected weekly (by department designated personnel) and maintained as per the manufacturer's instructions. Inspections must be documented in the Activation log. If the water supply is noticeably contaminated this finding must be documented on the Activation log;
- E. assuring training is provided to personnel on use of the emergency flushing equipment.

Lab managers, instructors, unit supervisors and students are responsible for assuring that the emergency flushing equipment is never obstructed or rendered inoperable through the accumulation of materials or storage that prevents immediate access to this equipment.

Facilities and Engineering designated personnel are responsible for:

- A. developing a system for numbering and recording inspections, maintenance issues, and replacement of emergency flushing equipment. (EHS will direct the process for inspection and dating of the equipment checks)
- B. inspecting and testing the Chemistry Department's emergency flushing equipment on campus at least annually;
- C. noting the inspection and testing of emergency flushing equipment on the inspection tag(s) attached to the equipment;
- D. coordinate with EHS to replace equipment inspection tags, as appropriate;
- E. responding in a timely manner to complaints of emergency flushing equipment failure

- or malfunction;
- F. assuring that all work orders and maintenance records are maintained for each piece of emergency flushing equipment;
 - G. assuring that the emergency flushing equipment (to include drench hoses) has tepid potable water available at all times; and when not available, affected laboratories and other work areas where hazardous materials are present are notified immediately to ensure alternative means for emergency flushing are on-hand;
 - H. modifying eyewash drains, if applicable, to allow for weekly departmental checks of the eyewash fountains and
 - I. providing an annual inspection and testing report to the Director of EHS.

Procedure

General Safety/Equipment Guidelines

1. All emergency flushing equipment must be clearly identified as prescribed by The Citadel Director of EHS.
2. All emergency flushing equipment must be clear and unobstructed at all times.
3. No storage is permitted within the eyewash station basin or over the eyewash station or shower that would prevent immediate recognition of the location or access to the emergency flushing equipment. *It is recommended that an area around the equipment should be properly marked with safety tape (yellow-black stripes) on the floor.*
4. All emergency eyewash stations, and drench hoses, portable eyewash single use bottles or gravity-fed eyewash units shall be checked weekly by laboratory personnel or other person designated by the department as responsible for the laboratory.
5. All emergency flushing equipment shall be inspected and tested on an annual basis by designated Facilities and Engineering personnel upon coordination with the department responsible person and EHS Director and the process documented on the tag attached to the equipment. A report must be provided by designated Facilities and Engineering personnel to the Director of EHS. The report identifies the equipment number, the test conducted, the passing or failure of the test, any repairs that need to be made, and the date of submission of a work order or date the repairs were made.
6. If at any time the water supply to a section of a building (including wing, floor, room, or part of a room) is shut off, then all water flushing devices in that section shall be inspected and tested within a day of the restoration of the water supply.
7. When a piece of emergency flushing equipment is inoperable, the unit supervisor, laboratory manager or instructor shall assure that all employees or students that are working with a potentially hazardous material have been notified of the alternative flushing method prior to starting their work. This notification shall include the location of the next closest plumbed water source for flushing which should be mounted in close proximity to the hazard area.
8. In the event of a chemical incident requiring emergency flushing, immediately begin flushing the eyes or other body part affected. Other persons in the laboratory shall place a call to The Citadel EMS at 811 (campus phones only). Continue the flushing as

directed by the Safety Data Sheet (SDS) for the hazardous material in use until EMS arrives to take control of the situation. Make every effort to have a SDS or other information available about the chemical that was involved in the incident.

9. The following information should be provided to any person who may have the opportunity to use an eyewash or drench hose:
 - Turn eyewash on, with the stream flowing, use your hands to hold your eyelids open and roll eyeballs up and down and sideways to allow sufficient flow into and around the eyes
 - Flush eyes thoroughly for at least 15 minutes or as directed by the SDS, until EMS arrives and takes charge of your medical care

If the exposure potential was significant enough for emergency flushing, EMS and medical care shall always be sought

10. The following information should be provided to any person who may have the opportunity to use the safety shower:
 - Activate the shower by pulling on the lever or handle
 - In some cases, the shower may shut off automatically and will require pulling the handle again
 - Remove any contaminated clothing and stay in the shower to remove any hazardous material
 - Shower thoroughly for at least 15 minutes, or as directed by the SDS, until EMS arrives and takes charge of your medical care

If the exposure potential was significant enough for emergency flushing, EMS and medical care shall always be sought.

If any emergency flushing equipment is not operating properly, Facilities and Engineering must be contacted. Indicate that it is a safety issue to achieve top priority.

Any emergency use of emergency flushing equipment must be reported to the Director of EHS (953-4816) and the Laboratory Safety Manager (953-1067) and an incident/accident form must be filled out as soon as possible but not later than 24 hours after the incident .