

## Acids in the Workplace Policy

### I. Purpose

This Policy provides direction for safe handling of acids at Albert Einstein College of Medicine.

### II. Scope

The Policy and the procedures outlined herein apply to all Einstein faculty, staff, and students.

### III. Policy

Einstein workers are confronted with a number of laboratory hazards including biological, chemical, and radioactive substances. Hazardous chemicals are a concern at this institution because of the type and variety of chemicals present. Although some of the most common types of chemicals in the laboratory are acids, workers may be unaware of their specific hazards. Acids are caustic, which means they can injure and destroy human tissue on contact. Even a small splash may produce severe burns and scarring. Some strong acids, such as nitric, perchloric, picric, sulfuric, chromic, and hydrochloric acid can be explosive when mishandled or mixed with incompatible compounds.

Adequate acid protection requires the ability to assess a potential hazard, utilize proper control procedures, select appropriate personal protective equipment, and understand what to do in the event of an emergency. Knowledge is vital to your protection. Information about the hazardous chemicals with which you work can be obtained speaking with the chemical manufacturer, your area supervisor, the Department of Environmental Health and Safety (EH&S), and by reading the Material Safety Data Sheet (MSDS), and the Einstein Chemical Hygiene Plan (CHP). A copy of the CHP should be located in each laboratory and is also available from EH&S on the eighth floor of the Forchheimer Building.

An understanding of chemical hazards may also encourage you to substitute extremely hazardous chemicals for other chemicals whose character is less hazardous. An example of substitution is the replacement of Chromic/Sulfuric acid-based glassware cleaner with a less hazardous detergent such as Nochromix®, which is sold by Fisher.

Guidelines for Working with Acids:

- Concentrated acids can react to generate excessive pressure and heat, increasing the potential to cause harm to people and equipment. The generation of heat can cause localized boiling of solutions or the spattering of the hot liquid and is the basis for the well-known practice of always adding acid to water, never the reverse.
- Abrupt addition of neutralizing agents to concentrated acids may cause fuming and boiling. The release of these acid fumes can have serious consequences. One example is the release of potentially

fatal hydrogen cyanide fumes from the neutralization of hydrocyanic acid. Always use the fume hood when diluting or neutralizing acids!

- If an acid splash or spill does occur, do not try to neutralize it with a base. This process generates excessive heat and could cause further damage.
- As acid containers age, they release acidic vapors into the environment, corroding storage cabinets and shelves. Call EH&S to remove any old acid bottles.
- Always label secondary acid containers. Knowing the hazardous nature of a chemical is important in emergency response. If bottles are not properly labeled, emergency response can be delayed.
- The use of personal protective equipment (PPE) is a very important factor in chemical hazard safety. PPE includes gloves, lab coats, goggles, and if appropriate, a face shield. Latex gloves are not recommended for work with most acids. Laboratories should be aware of glove incompatibilities with different chemicals. If you need help with glove selection call EH&S at ext. 4150.
- If a bodily exposure does occur, stay calm and immediately alert your co-workers and supervisor. In the case of a large splash, quickly remove all contaminated clothing while using the safety shower. Soak the affected area with cool water for at least fifteen minutes. Seconds count, and no time should be wasted on modesty. A chemical spill on the clothing may distribute the chemical over a greater surface area of the skin and facilitate skin absorption. Try not to spread the chemical on any unaffected skin, especially near the eyes. Wash off chemicals to the best of your ability and do not apply any type of neutralizer, soothing cream, or lotion. Promptly seek medical attention.
- Handling concentrated acids without proper training and supervision can be extremely dangerous. When handling any chemical, employees should completely understand the specific safe handling procedures. MSDSs are a great first source of information and can be accessed at the remote MSDS stations in the Forchheimer lobby, the 4th floor Forchheimer, the 9th floor of the Kennedy Building, and at EH&S on the 8th floor of Forchheimer. If there is a safety concern, ask your supervisor, get an MSDS, or call EH&S at ext. 4150.

#### IV. Definitions

None.

#### V. Effective Date

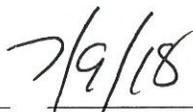
Effective as of: 18 April 2018

#### VI. Policy Management and Responsibilities

Einstein's Department of Environmental Health and Safety is the Responsible Office under this Policy. Einstein's Associate Dean for Finance and Administration is the Responsible Executive. Einstein's Senior Director of Environmental Health and Safety is the Responsible Officer for the management of this Policy.

#### VII. Approved (or Revised)

  
Responsible Executive

  
Date