Laboratory-Specific Standard Operating Procedures

TITLE: SOP for the safe use of Acetonitrile

Date: Review Date: Revised:

Principle Investigator:

Authors (Names):

Department, Building, Room(s):

Contact Phone Number:

This SOP must be kept on file for all laboratory employee training and review.

Section 1: (Check One)
There are three methods that can be used to write SOPs. They are: by process (distillation, synthesis, chromatography, etc.); by individual hazardous chemical (benzene, phenol, arsenic, etc.); and by hazardous chemical class (flammable, corrosive, oxidizer, etc.).

_____ Process _✖_ Chemical _____ Hazard Chemical Class

Section 2: Describe Process, Hazardous Chemical or Hazard Class
Provide a general description of what activities are covered under this SOP.

- Acetonitrile or Methyl cyanide (CAS # 75-05-8) is colorless, aromatic, water soluble, and flammable liquid if oxidized.
- It is used as a solvent for High Performance Liquid Chromatography (HPLC.)

Section 3: Potential Hazards
Describe the potential hazards for each process, hazardous chemical or hazard class. Include physical and health hazards.

- Hazardous if swallowed, inhaled, or absorbed through the skin. Over-exposure can result in death.
- Immediate effects: Irritation of the nose and throat with sneezing, sore throat or runny nose.

- Signs and Symptoms of Overexposure: Chest tightness or main, flushing of the face, central nervous system depression with dizziness, confusion, uncoordinated, drowsiness or unconsciousness.
- The substance is toxic to blood, kidneys, lungs, liver, mucous membranes, gastrointestinal tract, upper respiratory tract, skin, eyes, central nervous system (CNS). The substance may be toxic to the reproductive system. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: Personal Protective Equipment
Identify the required PPE. If a respirator is required, contact EH&S before using.

- Use rubber or neoprene gloves to provide best protection; if not, two layers of latex or nitrile gloves.
- Use lab coats, chemical splash goggles and closed toe shoes.

Section 5: Engineering Controls
Describe engineering controls that will be used to prevent or reduce employee exposure to hazardous chemicals.

- Always work with acetonitrile inside safety equipment designed to contain vapors such as a chemical fume hood.

Section 6: Special Handling and Storage Requirements
List storage requirements for hazardous chemicals involved with the SOP, including specific area, and policies regarding access to chemicals. Special procedures such as dating peroxide formers are appropriate here. Is a special "designated area" required?

- Dispense chemical under a fume hood. Never work with acetonitrile in an open room.
- Label containers with chemical name, hazard warnings.
- Store solutions of acetonitrile in tightly sealed containers and placed in secondary containment.
- Keep away from ignition sources.

Section 7: Spill and Accident Procedures
Indicate how spills or accidental release will be handled. List the location of appropriate emergency equipment. Any special requirements for protection of personal from exposure should be identified here.

- For Accidents:
  - Change gloves immediately once contact is noted
  - Flush eyes for 15 minutes with emergency eyewash if splash occurs
  - Utilize emergency drench shower for exposures to body

- Wash hands/skin with soap and water after flushing
- Report incident right away and get medical attention if necessary

- For Spills:
  Chemical spill kit must be stored accessibly in the lab. For all spills, large or small, refer to the EHS 200.002, Chemical Spill Response Procedures (See attachment for spill response procedures). For large spills and accidents, place absorbent material on the spill, evacuate, and contact University Police (568-8999) or EH&S (952-1337).

Section 8: Decontamination Procedures
Specify decontamination procedures to be used for equipment, glassware, and clothing: including equipment such as hoods, lab benches, and controlled (special "designated area") areas within the lab.

Wash with copious amount of water, followed with soap and water.

Section 9: Waste disposal Procedures
Waste must be disposed in accordance with LSUHSC EHS 200.04, Chemical Waste Management Procedures.

- Waste storage – Acetonitrile containing waste should be placed in a tightly sealed and labeled container with "HAZARDOUS WASTE – acetonitrile" and the date collection began.
- To schedule a waste pick-up by EH&S, use the bob.lsuhsc.edu service request system.