STANDARD OPERATING PROCEDURES (SOP) FOR WORKING WITH BETA MERCAPTOETHANOL AT AMHERST COLLEGE

General Information

Beta Mercaptoethanol, also known as Thioglycol, or simply just BME, is a highly toxic, lightly colored (though sometimes colorless) liquid, that has a very strong, unpleasant odor. It is commonly used as a reducing agent in protein related experiments.

Beta Mercaptoethanol poses considerable risks to humans and the environment and hence, special precautions must be taken in both its use and disposal.

Personal Protective Equipment

When working with Beta Mercaptoethanol, the following personal protective equipment (PPE) must be worn:

- Splash goggles
- Lab coat
- Long pants
- Close toed shoes
- Nitrile Gloves (change gloves immediately after glove contact)

Safety Devices

Fume hood – always work with Beta Mercaptoethanol in a fume hood to prevent exposure by inhalation.

Identify the location of all the safety devices in the room before starting your procedure. Also, familiarize yourself with all the possible means of egress.

Specific Health Hazards

Note that the exposure limit for this compound is very low. Throughout an eight-hour workday, personnel shall not be exposed to more than 0.2ppm (0.2mg/L) on average.
Environmental Health & Safety

**Beta Mercaptoethanol may be fatal if absorbed through the skin.** It is extremely destructive to tissues in the respiratory tract and the mucous membrane. Repeated exposure may lead to long term damage to organs such as the heart and liver.

Pictogram:

Hazards: Corrosive, Irritant, Liver and Heart damage, Toxic, Environmental

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**Routes of Entry**

Inhalation, skin absorption, ingestion, skin contact/eye contact

**If any part of your body comes in contact with Beta Mercaptoethanol, call the Amherst College Emergency phone number 413-542-2111. Also call this number if you begin to feel ill after working with (or in the vicinity of) Beta Mercaptoethanol**

**Inhalation**

If inhaled, move to fresh air, and get help. Call x2111 to report if you begin to feel ill

**Eye contact**

Use eyewash to flush eyes with water for at least 15 minutes

**Skin Contact/absorption**

Wash skin with plenty of water. Use safety shower, if needed

**Ingestion**

Do not induce vomiting

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**Storage**

Store in a tightly closed container in a cool, dry area that is well ventilated, such as a vented cabinet. Do not store on shelf. Store in a secondary container by itself

Store away from oxidizers, acids, metals

Store away from ignition sources

If you have Beta Mercaptoethanol that you no longer need, please contact Jason Williams, x2736, for disposal
Spill clean up

If a spill of any volume occurs:

Alert everyone in the area
Leave the room
Close the door behind you
Call Jason Williams (Chemical Hygiene Officer) or The Amherst College emergency number (x2111) to report it.

Due to the high toxicity of this compound, clean up shall only be done by trained individuals.

Disposal

Disposable pipets, pipet tips, and any other disposable devices that come in contact with Beta Mercaptoethanol shall be disposed of as hazardous waste. All contaminated PPE shall be disposed of as hazardous waste.

Beta mercaptoethanol may be disposed of into your “aqueous: non halogenated” waste container" (but only if compatible with existing waste) or by itself.

If you have Beta Mercapoethanol that you no longer need, contact the Chemical Hygiene officer

Questions

Contact Jason Williams or Environmental Health and Safety if you have any questions about this SOP or this compound.