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 (double gloving recommended, 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. Keep safety devices and means of egress clear at all times.

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.

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.
Hazards: Corrosive, Irritant, Liver, 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 Police Department (ACPD) 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.

Choose corresponding route of entry and action – note that the actions listed for each route of entry may vary depending on chemical; consult Safety Data Sheet.

**Inhalation**

If inhaled, move to fresh air, and get help. If you begin to feel ill during/ after working with Beta Mercaptoethanol, call the Amherst Police Department (ACPD) at x2111 to report it.

**Eye contact**

Use eyewash to flush eyes with water for at least 15 minutes. Remove contact lenses, if present.

**Skin Contact**

Call the Amherst College Police Department (x2111).

Wash skin with plenty of water for 15 minutes. Use safety shower, if needed.

**Ingestion**

Do not induce vomiting, rinse mouth, drink plenty of water, etc.

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**Storage and Special Handling**

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.

Compounds incompatible with Beta Mercaptoethanol are oxidizers, acids, metals, and ignition sources.

If you have Beta Mercaptoethanol that you no longer need, please contact Jason Williams at x2736, for disposal.

**Special Handling**

Add acid to water, not water to acid; maximum concentration or volume to make stock expired after X days, pour dropwise, etc.
**Spill clean up**

Do not attempt to clean up any chemical unless you are comfortable with doing so.

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) at x2736 or the Amherst College Police Department (x2111) to report it.

**Due to the high toxicity of this compound, clean up shall not be done by lab personnel.**

**Disposal**

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

Waste containing acutely hazardous chemicals shall not be mixed with other types of 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 Mercaptoethanol that you no longer need, contact Jason Williams (Chemical Hygiene Officer) at x2736.

**Questions**

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