##### SOP for β-mercaptoethanol

University of Washington

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| Standard Operating Procedures for Chemicals or Processes |
| #1 Process(if applicable) | β-mercaptoethanol is a clear, colorless liquid with an unpleasant odor (similar to rotten eggs). It is commonly used in the lab to reduce disulfide bonds and can act as a scavenger for hydroxyl radicals. |
| #2 Chemicals | * β-mercaptoethanol (BME) has a very low odor threshold (0.12-0.64 ppm) and smells similar to the odorant used in natural gas. If the odor becomes widespread, people in nearby areas may suspect a natural gas leak, which may lead to calls to the fire department and/or evacuation of the building, which can be inconvenient and disruptive.
* BME can be toxic if ingested, and fatal if inhaled or absorbed through the skin.
* Vapors can irritate the eyes, mucous membranes, and respiratory tract. Symptoms of inhalation exposure may include coughing, sore throat, and/or shortness of breath.
* When BME is heated to decomposition, toxic fumes including sulfur oxides and carbon oxides will be emitted.
* BME is combustible as a liquid or vapor!
* Reactions of BME with strong acids or alkali metals will release flammable hydrogen gas.
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| #3 Personal Protective Equipment (PPE) | * At a minimum, double-glove using nitrile laboratory gloves and wear a lab coat and safety glasses when pipetting small amounts.
* If gloves come into contact with the chemical, change them immediately.
* If there is a possibility of splashing, wear chemical splash goggles and/or a face shield.
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| #4 Environmental /Ventilation Controls | ALWAYS work with BME inside a chemical fume hood or 100% exhausted biological safety cabinet (Class II, Type B2). |
| #5 Special Handling Procedures & Storage Requirements | * BME is incompatible with metals, oxidizing agents, acids, alkalis, calcium hypochlorite, aliphatic amines, and isocyanates.
* Purchase and use in the smallest practical quantities for the experiment being performed.
* Know the location of the nearest fire extinguisher before beginning work.
* Eliminate ignition sources such as open flames and hot surfaces.
* Keep containers closed as much as possible when not in use.
* Be aware of skin absorption as a possible route of exposure. Plan work so that minimal glove contact is expected, and purchase appropriate gloves (e.g. [butyl rubber](http://www.showabestglove.com/site/products/detail.aspx?style=878), [Silver Shield](https://www.vwrsp.com/catalog/product/index.cgi?catalog_number=11000-646)) for cleaning up small spills. For spill procedures, see Section 9.
* If glove contact occurs, change gloves immediately.
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| #6 Spill and Accident Procedures | Use butyl rubber or Silver Shield for cleaning up small spills |
| #7 Waste Disposal | Surplus chemicals will be disposed of as hazardous chemical waste according to UW policies. |
| #8 Special Precautions for Animal Use(if applicable) | N/A |
| Particularly hazardoussubstance involved? |  YES: | Blocks #9 to #11 are Mandatory |
|  NO: | Blocks #9 to #11 are Optional. |
| #9 Approval Required | N/A |
| #10 Decontamination | N/A |
| #11 Designated Area | N/A |
| Name: Priska von Haller Title: PhD |
| Signature: Date: 12/10/2014  |

Environmental Health and Safety, Box 354400 \**to be filled in by PI or Supervisor*