##### 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. | | |
| #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. | | |
| #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. | | |
| #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 hazardous  substance 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*