|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Duke OESO Guidelines for Safe Use of**  **Ethidium Bromide**  ***AKA EtBr: Commonly used as a fluorescent marker in electrophoresis***  ***Complete Lab-Specific Safety Information on page 2.*** | | | | |  | |
| **Hazards** | **Potential Hazards** | * Ethidium Bromide, an odorless solid, is **fatal if inhaled**. It is therefore **Particularly Hazardous**. * Ethidium bromide is a **mutagen** and is harmful if swallowed. * Consult the Safety Data Sheet (SDS) and [Laboratory Chemical Safety Summary.](https://pubchem.ncbi.nlm.nih.gov/compound/ethidium_bromide#datasheet=lcss&section=Top) | | | | | | |
| **Hazard Controls** | **Selection & Purchase** | * Use a [**safer alternative**](https://www.safety.duke.edu/laboratory-safety/work-practices-ppe/safer-alternatives) when possible. * Purchase the smallest containers at the lowest concentration practical. | | | | | | |
| **Storage & Transportation** | * 03-439, 03-439AStore/transport powder and solutions in sealed **shatter-resistant** containers. * **Secondary containment** is advised for transport. * Store away from strong oxidizing agents in a cool, dry place. | | | | | | |
| **Engineering Controls** | * Work in a chemical fume hood (or other exhausted enclosure) if aerosols could be created, including for: * **Open** containers of **dry powder** * Open or **pressurized** manipulations of suspensions/solutions. | | Chemical Fume Hood Flow Diagram | * An **eyewash** or eyewash/drench hose is strongly recommendedin the immediate work area. | | | Eye Shower, Eye Wash, Rinse Eyes, First Aid, Sign |
| **Work Practice Controls** | * Label **designated work area** “Ethidium Bromide in use. Mutagen and toxic.” Post this Guideline nearby. * Line the work area with a disposable plastic-backed absorbent pad. * Keep **containers closed** as much as possible.   **Ethidium Bromide Work Area**  Danger!  Toxic! Mutagen!   * If weighing dry powders, **place balance in hood** **OR**   + ***Tare*** *(pre-weigh) an empty container with a lid.*   + *Go to* ***hood****, add* ***powder*** *to container,* ***close*** *lid.*   + *Go to balance to weigh.*   + ***Return to hood*** *to make solution or manipulate powder.* * Check the work area for contamination using a UV light. If decontamination is needed, wipe up any excess liquid with paper towels then use either of the methods below. | | | | | | |
| * Wipe surface six times with wet paper towels.   **OR** | * Wet surface with ethanol. Sprinkle activated charcoal on top. Wipe up paste with paper towel. | | | | | |
| * **All** decontamination materials must be disposed of as hazardous waste. | | | | | | |
| **Personal Protective Equipment** | Image result for safety glasses**Minimum PPE:**   * **Safety glasses** * **Nitrile gloves** (Change Immediately if contaminated & every 2 hours. Wash hands at time of change) * Fully buttoned **lab coat** with sleeves extending to the wrists. | | | | lab coat2nitrile gloves | | |
| gogglesnitrile gloves**Risk of splash/large amounts:** (in addition to the above, wear)   * **Goggles** and a **face shield**. * A 2nd pair of nitrile gloves * **Sleeves** or **gown** impermeable to powders | | | | Image result for protective gownhttps://uk.vwr.com/stibo/web/std.lang.all/93/90/17789390.jpg | | |
| *Check the manufacturer’s glove guide for glove effectiveness if using a solvent other than water.* | | | | | | |
| **Other** | **Emergencies** | See Emergency Response Flip Chart and/or lab specific chemical hygiene plan. | | | | | | |
| **Waste** | See the [Information Sheet on Disposal of Ethidium Bromide Waste](https://www.safety.duke.edu/sites/default/files/EthidiumBromideDisposalInfoSheet.pdf). | | | | | | |
| **Training** | Sign signature page in lab-specific plan to indicate review. | | | | | | |
| **Questions** | Contact OESO Lab Safety at 919-684-8822. | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **Lab-Specific Safety Information for**  **Ethidium Bromide**  ***Supplements the Guidelines for Safe Use of Ethidium Bromide*** | |  |
| **Lab** | **PI Name** | Click or tap here to enter PI Name | | |
| **Location** | Enter building(s) and room(s) where lab is located | | |
| **Lab-Specific Hazard Controls** | **Purchase**  **Details** | Maximum container size | Enter maximum container sized purchased | |
| Maximum concentration | Enter maximum concentration purchased | |
| Container type | Enter the container material | |
| Specific product information | Enter supplier name/product number or purity/grade to purchase | |
| **Storage** | Specific location | Enter rooms and areas designated for use | |
| **Use Information** | Designated work area  (specific room(s) and area(s)) | Enter rooms and areas designated for use | |
| Maximum quantity | Enter maximum quantity to be used at a time | |
| Decontamination method | Wipe surface six times with wet paper towels  OR  (Remove hot surfaces & sources of sparks/flame.) Wet surface with ethanol. Sprinkle activated charcoal on top. Wipe up paste with paper towel.  **Dispose of used decontamination** **materials** **as** **chemical** **waste**. | |
| Location of supplies for decontamination  (or spill clean-up) | Enter location of decontamination supplies | |
| **Details of Process** | 1. Enter steps used in lab process(es) or experiment(s) | | |