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| **CONTACT INFORMATION** | | | |
| **Location** | Building: | | Room: |
| **Street Address:** |  | | |
| **Lab Safety Contact:** | Name: | | |
| Lab Phone: | Office Phone: | |
| **Emergency Contact** | Name: | Phone: | |
| **TYPE OF STANDARD OPERATING PROCEDURE** | | | |
| Indicate which type of Standard Operating Procedure applies  Specific Process or Equipment  Specific Hazardous Chemical  Hazard Class for a Group of Chemicals | | | |
| **DESCRIBE PROCESS/EQUIPMENT, HAZARDOUS CHEMICAL or HAZARD CLASS** | | | |
| **Ethidium Bromide** (EtBr), Homidium Bromide, Dromilac, [3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide](https://www.ncbi.nlm.nih.gov/pcsubstance/?term=%223%2C8-Diamino-5-ethyl-6-phenylphenanthridinium%20bromide%22%5bCompleteSynonym%5d%20AND%2014710%5bStandardizedCID%5d), [2,7-Diamino-10-ethyl-9-phenylphenanthridinium bromide](https://www.ncbi.nlm.nih.gov/pcsubstance/?term=%222%2C7-Diamino-10-ethyl-9-phenylphenanthridinium%20bromide%22%5bCompleteSynonym%5d%20AND%2014710%5bStandardizedCID%5d), [C21H20BrN3](https://pubchem.ncbi.nlm.nih.gov/#query=C21H20BrN3)  Ethidium bromide is an intercalating agent commonly used as a non-radioactive DNA stain to identify and visualize nucleic bands in electrophoresis and perform other methods of nucleic acid separation. Solutions of ethidium bromide fluoresce with a reddish-brown or orange color when exposed to ultraviolet (UV) light. | | | |
| **HAZARD SUMMARY** | | | |
| The powder form is considered an irritant to the upper respiratory tract, eyes and skin. Ethidium bromide is strongly mutagenic, causing living cell mutations. Even though there is no evidence at this time of human carcinogenicity or teratogenicity, this material should be considered a possible carcinogen or teratogen.  SybrSafe is a safer alternative to ethidium bromide. While SybrSafe should be handled and disposed of the same as ethidium bromide, it is somewhat less mutagenic and therefore safer to handle.  Acute hazards:  Harmful if swallowed or absorbed through skin, May be fatal if inhaled, suspected of causing genetic defects.  **Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.  **Skin contact:**  Wash off with soap and plenty of water for at least 15 minutes. Take victim immediately to hospital. Consult a physician.  **Eye contact:** Flush eyes with water for at least 15 minutes. Consult a physician.  **If swallowed**: Induce vomiting. Give large quantities of water or milk. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. | | | |
| **SPECIAL HANDLING AND STORAGE REQUIREMENTS** | | | |
| **Precautions:**  Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from flammable vapors and oxidizers.  **Storage:**  Keep container tightly closed in a dry and well-ventilated place. | | | |
| **ENGINEERING AND VENTILATION CONTROLS** | | | |
| Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.  Handling processes should be designed to minimize the potential for splash, splatter, or other likely scenarios for accidental contact.When possible, dispense chemical under a fume hood. The handling of this chemical in powder form must be conducted in a fume hood.  Additional engineering/ventilation controls for the handling of this chemical include:  Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location. | | | |
| **PERSONAL PROTECTIVE EQUIPMENT** | | | |
| **PPE Requirements:**  Long pants or clothing that covers all skin below the waist  Shoes that cover the entire foot  Gloves; indicate type: Nitrile rubber  Inspect gloves before use. Use proper glove removal technique to avoid skin contact with outer surface of glove. Wash hands after removing gloves.  Safety goggles  Safety glasses  Face shield  Lab coat  Flame-resistant lab coat  Other: Click here to enter text.  If the use of an N95, half mask, or full face respirator is requested, the individual and/or their supervisor must first contact Environmental Health & Safety for a consultation to determine if respirator use is necessary. If EH&S determines the use of a respirator is necessary, the individual must participate in the University’s respirator program. This includes a medical evaluation; respirator fit test, and training. | | | |
| **EMERGENCY PROCEDURES** | | | |
| In case of fire or large and/or extremely hazardous chemical releases pull the fire alarm and evacuate the area  If someone is seriously injured or unconscious  **CALL 911 or CAMPUS POLICE AT (813)-974-2628**  From a safe place, provide as much information as possible to the emergency responders including chemical name, volume, hazards, injuries, and location.  **Chemical Exposure**: Remove any contaminated clothing, and IMMEDIATELY flush contaminated skin with water for at least 15 minutes following any skin contact. For eye exposures, IMMEDIATELY flush eyes with water for at least 15 minutes. Consult SDS for guidance on appropriate first aid. Where medical attention is required, bring the SDS(s) of chemical(s) to aid medical staff in proper diagnosis and treatment.  **Evacuation Procedure**   * Immediately evacuate the building via the nearest exit when the fire alarm is activated. * If unable to evacuate due to a disability, shelter in the area of rescue / refuge, typically a stairwell landing, and wait for assistance from drill volunteers or emergency responders. * Instruct visitors and students to evacuate and assist them in locating the nearest exit. * Do not use elevators to exit the building during an evacuation as they may become inoperable. * Carry only those personal belongings that are within the immediate vicinity. * Close doors to limit the potential spread of smoke and fire. * Terminate all hazardous operations and power off equipment. * Close all hazardous materials containers. * Remain outside of the building until the building is released for reentry. * Do not restrict or impede the evacuation. * Convene in the designated grassy gathering area and await instruction from emergency responders or drill volunteers. Avoid parking lots. * Report fire alarm deficiencies, (e.g., trouble hearing the alarm) to facilities personnel for repair. * Notify evacuation drill volunteers or emergency responders of persons sheltering in the areas of rescue/ refuge. * **Never assume that an alarm is a “false alarm”. Treat all fire alarm activations as emergencies. Get out of the building!**   **Incident and Near Miss Reporting**: Report any incident that occurs in any University of South Florida affiliated teaching or research laboratory/studio or field research project. An incident means any unplanned event within the scope of a procedure that causes, or has the potential to cause, an injury or illness and/or damage to equipment, buildings, or the natural environment. Due to medical privacy concerns, no personal medical information of the person involved in the incident shall be entered on or submitted with the form.  <http://www.usf.edu/administrative-services/environmental-health-safety/reporting/index.aspx>  **Workers’ Compensation Procedure:** Supervisor and employee (if possible) call AmeriSys at 800-455-2079 to report a work-related injury or illness. Complete the [Consolidated Injury/Illness Reporting Form](https://www.usf.edu/administrative-services/environmental-health-safety/reporting/injury-illness-reporting.aspx), and send it to EH&S within 24 hours. | | | |
| **WASTE DISPOSAL** | | | |
| Describe how to dispose of the chemical waste produced from this activity.  All chemical waste generated within USF System laboratories is considered hazardous waste and must be disposed of as hazardous waste in accordance with USF Hazardous Waste Management Procedure, the EPA, and the DEP. The USF Hazardous Waste Management Procedure can be found using the following link, <http://www.usf.edu/administrative-services/environmental-health-safety/resources/manuals-procedures.aspx> | | | |
| **TRAINING REQUIREMENTS** | | | |
| All individuals working with chemicals in USF laboratories must take EH&S’s Laboratory Safety Training. To register for Laboratory Safety Training, please use the following link, <https://www.usf.edu/administrative-services/environmental-health-safety/training/course-descriptions.aspx#labsafety>  This procedure may warrant additional safety training per the PI, EH&S, or an authorizing unit such as the Biosafety or Radiation Safety programs. Check training requirements for this activity below:  Research Specific Training from the PI/Lab Supervisor or their designee  EH&S Laboratory Safety Training  EH&S Hazard Communication  EH&S Hazardous Waste Awareness and Handling  EH&S Respirator Fit Test  EH&S Biomedical Waste  EH&S Universal Pharmaceutical Waste Testing  EH&S Fire Prevention Safety  EH&S Slips, Trips, and Falls  RIC Biosafety Core Course  RIC Shipping Biohazardous Materials  RIC BSL 3  RIC Radiation Safety  RIC Laser Safety  RIC Boating Safety  RIC Scientific Diving  Other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| **PRIOR APPROVALS** | | | |
| This activity requires prior approval from the PI/designee.  If this box is checked, working alone is not allowed. | | | |

By signing and dating here the Principal Investigator/ or a designee certifies that the Standard Operating Procedure (SOP) for ***Ethidium Bromide*** is accurate and effectively provides safe standard operating procedures for employees and students in this lab who will handle this hazardous chemical.

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Signature Printed Name Date

I affirm that I have read and understand the Standard Operating Procedure for***Ethidium Bromide*** and have undergone the EH&S Laboratory & Research training and any lab specific training regarding this SOP.

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| Printed Name | Signature | Date |
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