**Standard Operating Procedure for Laboratories**

**HYDROGEN BROMIDE**

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| --- | --- |
| Department: | Click here to enter text. |
| Principal Investigator(s): | Click here to enter text. |
| Lab Manager/Coordinator: | Click here to enter text. |
| Location of Experiment: (Building/Room Number) | Click here to enter text. |
| Lab Phone: | Click here to enter text. |
| Office Phone: | Click here to enter text. |
| Emergency Contact: (Name/Phone) | Click here to enter text. |

**Reviewed and Approved by**:

|  |  |
| --- | --- |
| PI: (Typed Name) | Click here to enter text. |
| PI: (Signature and Date) |  | Click here to enter a date. |
| Lab Manager: (if PI unavailable) |  | Click here to enter a date. |

**Hazardous Material Use and Management**

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| Hazardous Material(s) Used: (wt./volume) | Hydrogen bromide:Maximum amount allowed without PI approval: |
| Hazardous Material Storage Location: | Store away from combustible materials. Keep container tightly closed in a cool, dry, and well ventilated. Incompatible with oxidizing agents. Incompatible with strong acids and bases, ammonia, halogens, ozone, fluorine and ferric oxide. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive period. Full and empty cylinders should be segregated.Designated Storage Area: |
| Experimental Procedure and Lab Techniques to be used: | Lab must have written procedures for cylinder purge, set up and swap. |
| Hazard Identification: (i.e., physical/health hazards) | **CAS # 10035-10-6****GHS Classification: Gases under pressure. Acutely toxic, Corrosive to skin. Cause serious eye damage.*** Contains gas under pressure; may explode if heated.
* Causes severe skin burns and eye damage.
* Contact with rapidly expanding gas may cause burns or frostbite.
* Toxic if inhaled. May cause respiratory irritation. May be fatal if inhaled.
* May accelerate combustion and will react vigorously or explosively with many materials.
* Reacts violently with strong oxidizers, strong caustics, moisture, copper, brass, zinc.
* In presents of moisture forms hydrobromic acid that is highly corrosive to most metals.

OSHA PEL: TWA 3ppm (10mg/m3)NIOSH REL: C 3ppm (10 mg/m3)Review MSDS/SDS prior to working with chemical. |
| Engineering Controls: (chemical fume hood, biosafety cabinet, glove box) | Use in chemical fume hood with adequate exhaust ventilation and electrically grounded lines and equipment.Prevent suckback of foreign material into the cylinder by using check valve, vacuum break or trap. If suckback occurs, it can create buildup of dangerous pressure within the cylinder. Safety shower and eyewash must be readily available. |
| Protective Equipment: | Handle with gloves. Butyl-rubber or chloroprene gloves are recommended.Wear tightly fitting safety goggles. Wear full length lab coat to prevent skin exposure.Always check with glove manufacturer for more info. |
| Waste Collection/Disposal Method: | Empty gas cylinders should be returned to the compresses gas distributer. Make sure that valve protection cap is in place.All other waste should be collected in tightly closed container, in secondary containment and in a designated location inside a fume hood. Store waste away from incompatible waste. Affix and complete hazardous waste label. Contact REHS for waste pick up. <https://halflife.rutgers.edu/forms/hazwaste.php> |
| Spill Management:  | Evacuate personnel. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Wear respiratory protection and if possible, stop the gas leak. Soak up the spill with inert absorbent material and double bag it.If a spill happened outside fume hood, on floor, on bench or outside the lab contact REHS for clean up or call 911. |
| First Aid: | **Eyes**: Check and remove contact lenses. Immediately flush eyes with warm water for 15 min. Seek medical attention. **Skin:** Immediately flush skin with plenty of water. Seek medical attention.**Inhalation**: Remove to fresh air. If breathing is difficult give oxygen. Call a poison center. Seek medical attention.**Ingestion:** Do not induce vomiting. Call poison center. Get medical attention.  |

**Training**

* Prior to conducting any work with hydrogen bromide, designated personnel must be provided training specific to the hazard involved in working with the substance.
* The PI must provide his/her lab personnel with a copy of the SOP and a copy of the SDS provided with the manufacturer.
* The PI must ensure that his/her lab personnel have attended and are up to date on the appropriate laboratory safety training within the last year.

I have read and understood the content of this SOP and the SDS:

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| --- | --- | --- |
| Lab Personnel (Running the Experiment) | Date of Hands-on Training from Department | Signature of Lab Personnel |
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**Gases under pressure. Acutely toxic, Corrosive to skin. Cause serious eye damage.**

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**FIRST AID**

**Eyes**: Check and remove contact lenses. Immediately flush eyes with warm water for 15 min. Seek medical attention.

**Skin**: Immediately flush skin with plenty of water. Seek medical attention.

**Inhalation:** Remove to fresh air. If breathing is difficult give oxygen. Call a poison center. Seek medical attention.

**Ingestion:** Do not induce vomiting. Call poison center. Get medical attention.

**DIAL 911 Call REHS for more information 848-445-2550**