Standard Operating Procedure

Rubidium Hydroxide

*This is an SOP template and is not complete until: 1) lab specific information is entered into the box below 2) lab specific protocol/procedure is added to the protocol/procedure section and
3) SOP has been signed and dated by the PI and relevant lab personnel.*

 Print a copy and insert into your
*Laboratory Safety Manual* and *Chemical Hygiene Plan*.
Refer to instructions for assistance.

|  |  |
| --- | --- |
| **Department:** | Click here to enter text. |
| **Date SOP was written:** | Click here to enter a date. |
| **Date SOP was approved by PI/lab supervisor:** | Click here to enter a date. |
| **Principal Investigator:** | Click here to enter text. |
| **Internal Lab Safety Coordinator/Lab Manager:** | Click here to enter text. |
| **Lab Phone:** | Click here to enter text. |
| **Office Phone:** | Click here to enter text. |
| **Emergency Contact:** | Click here to enter text. |
| *(Name and Phone Number)* |
| **Location(s) covered by this SOP:** | Click here to enter text. |
| *(Building/Room Number)* |

**Type of SOP:** [ ]  Process [x] Hazardous Chemical [ ]  Hazardous Class

**Purpose**

Rubidium hydroxide is a strong inorganic base. Rubidium hydroxide does not naturally appear in nature, but it can be obtained by synthesis from rubidium oxide by dissolving oxide into water. Rubidium hydroxide is rarely used in industrial processes or research because it is expensive and because potassium hydroxide and sodium hydroxide are safer to use and can perform nearly all functions of rubidium hydroxide.

**Physical & Chemical Properties/Definition of Chemical Group**

CAS#: 1310-82-3

Class: Corrosive

Molecular Formula: RbOH

Form (physical state): Solid powder or pellets (often found in aqueous solution)

Color: White

Boiling point: N/A

**Potential Hazards/Toxicity**

Very harmful by skin contact, eye contact, ingestion, and/or inhalation. Material causes severe skin burns if spilled on skin and causes significant eye damage, even blindness, if splashed. It is very harmful if swallowed. It is harmful if inhaled since material is extremely destructive to the tissue of mucous membranes and upper respiratory tract.

**Personal Protective Equipment (PPE)**

**Respirator Protection**

Use a full-face respirator with multi-purpose combination respirator cartridges as a backup to engineering controls (i.e. when no fume hood available).

Respirators should be used only under any of the following circumstances:

* As a last line of defense (i.e., after engineering and administrative controls have been exhausted).
* When Permissible Exposure Limit (PEL) has exceeded or when there is a possibility that PEL will be exceeded.
* Regulations require the use of a respirator.
* An employer requires the use of a respirator.
* There is potential for harmful exposure due to an atmospheric contaminant (in the absence of PEL)
* As PPE in the event of a chemical spill clean-up process

Lab personnel intending to use/wear a respirator mask must be trained and fit-tested by ORS and should contact occhealt@uga.edu. This is a UGA requirement described in more detail in the [UGA Respiratory Protection Plan](https://esd.uga.edu/sites/default/files/respiratoryprotection.pdf) and supported by the [Office of Research Occupational Health and Safety Program](https://research.uga.edu/ohsp/).

**Hand Protection**

Neoprene, nitrile, or butyl rubber gloves are recommended.

NOTE: Consult with your preferred glove manufacturer to ensure that the gloves you plan on using are compatible with rubidium hydroxide.

Refer to glove selection chart from the links below:

<http://www.ansellpro.com/download/Ansell_8thEditionChemicalResistanceGuide.pdf>

OR

<http://www.allsafetyproducts.biz/page/74172>

OR

<http://www.showabestglove.com/site/default.aspx>

OR

<http://www.mapaglove.com/>

**Eye Protection**

When handling the chemical, wear chemical splash goggles.

**Skin and Body Protection**

Lab coat, full length pants or equivalent, and closed toe shoes. Wear a chemical-resistant apron or full body suit during activities which pose a splash hazard.

**Hygiene Measures**

Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Engineering Controls**

Facilities storing or utilizing this material should be equipped with a first aid kit and those working with rubidium hydroxide should always practice safe handling. A fume hood should be used at all times when handling rubidium hydroxide.

**First Aid Procedures**

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Get medical attention immediately.

**In case of skin contact**

Take off contaminated clothing and shoes immediately and flush skin with plenty of water for at least 15 minutes. Wash clothing and thoroughly clean shoes before reuse. In case of severe skin contact, wash with a disinfectant soap and cover the contaminated skin area with an anti-bacterial cream. Get medical attention immediately.

**In case of eye contact**

Check for and remove any contact lenses. Immediately flush eyes thoroughly with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

**If swallowed**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Rinse mouth with water. Get medical attention immediately.

**Special Handling and Storage Requirements**

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. A fume hood should be used when handling rubidium hydroxide. Normal measures for preventive fire protection. Keep container tightly closed in a cool, dry, and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in a secondary container with other bases segregated away from acids, flammables, and oxidizers. Cabinets where significant quantities of rubidium hydroxide and/or other acids and bases are stored must be labeled with the hazard warning “Corrosive.”

**Spill and Accident Procedure**

**Chemical Spill Dial 911**

**24-7 On-Call Response to Research, Environment, Health or Safety Concerns Dial 2-5561 from a campus phone or 706-542-5561 from a non-campus line.**

**Spill** – Follow the procedures set out in the [UGA Chemical and Laboratory Safety Manual.](http://research.uga.edu/docs/units/safety/manuals/Chemical-Laboratory-Safety-Manual.pdf)

[If there are any chemical-specific protocols for responding to a spill, insert them here or mark “none”:]

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# **Medical Emergency Dial 911**

**Life Threatening Emergency, After Hours, Weekends And Holidays** – Dial **911** or the emergency phone numbers listed at the beginning of the UGA Chemical and Laboratory Safety Manual

*Note: All incidents that result in an injury or property damage must be reported to ORS / ESD using a University Incident/Accident Report.*

**Non-Life Threatening Emergency** – Follow the instructions in the UGA Chemical and Laboratory Safety Manual.

*Note: All incidents that result in an injury or property damage must be reported to ORS / ESD using a University Incident/Accident Report.*

**Decontamination/Waste Disposal Procedure**

**For general hazardous waste disposal procedures, see Appendix H of the UGA Chemical and Laboratory Safety Manual.**

**Chemical Specific Procedures: [to be inserted or marked as “none”]**

Instruments and benches contaminated with rubidium hydroxide should be decontaminated with soap and water. All rubidium hydroxide waste and contaminated disposables should be disposed of as hazardous waste.

**Safety Data Sheet (SDS) Location**

UGA personnel can access Online SDS through a link in the upper left corner of the ESD home page (<https://esd.uga.edu>) and logging in by using their UGA email user name and password.

**Protocol/Procedure (Add lab specific Protocol/Procedure here)**

Click here to enter text.

**NOTE**

Any deviation from this SOP requires approval from PI.

**Documentation of Training** (signature of all users is required)

* Prior to conducting any work with rubidium hydroxide., designated personnel must provide training to his/her laboratory personnel specific to the hazards involved in working with this substance, work area decontamination, and emergency procedures.
* The Principal Investigator must provide his/her laboratory personnel with a copy of this SOP and access to the SDS provided by the manufacturer.
* The Principal Investigator must ensure that his/her laboratory personnel have attended appropriate laboratory safety training or refresher training within the last 12 months.

**Principal Investigator SOP Approval**

Print name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Approval Date:

I have read and understand the content of this SOP:

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| **Name** | **Signature** | **Date** |
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