Standard Operating Procedure

Decaborane

*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 ☒Hazardous Chemical ☐ Hazardous Class

**Purpose**

(*State the procedure the specific chemical is used for in lab/the purpose of the chemical*)

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

CAS#: 17702-41-9

Class: Highly flammable and toxic

Molecular formula: B10H14

Form (Physical State): White crystals

Melting Point: 99.6 °C

Boiling Point: 213 °C

Density: 0.94 g/cm3



**Potential Hazards/Toxicity**

LD50 rat: 64 mg/kg

**Potential Health Effects:**

Exposure can cause restlessness, headaches, fatigue, clumsiness, nausea, hiccups and shaking. High levels can cause muscle twitches, convulsions, unconsciousness, and death. Contact can cause severe eye burns, leading to permanent damage. It may also irritate the skin, causing a rash or burning feeling on contact. Exposure to the vapor can irritate the eyes, nose, and throat.

**Personal Protective Equipment (PPE)**

* *Eyes:* Wear safety glasses.
* *Skin:* Wear nitrile, natural rubber, neoprene, butyl, PVC or Viton gloves.
* *Clothing:* Wear long pants, shirt, and closed toe shoes and a lab coat while handling.
* *Respirators:* Respiratory protection is not generally required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.
* 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/).

**Engineering Controls**

* Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
* Use only in a chemical fume hood.

**First Aid Procedures**

* *Inhalation*: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.
* *Skin Contact*: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
* *Eye Contact*: Remove from exposure. Immediately flush eyes with plenty of water for at least 15 minutes, holding eyes open.
* *Ingestion*: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Special Handling and Storage Requirements**

**Precautions:** Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

**Storage:** Decaborane must be stored to avoid contact with OXIDIZERS, such as PERMANGANATES, NITRATES, PEROXIDES, CHLORATES, and PERCHLORATES; or HALOGENATED COMPOUNDS, since violent reactions occur. Store in tightly closed containers in a cool, well-ventilated area away from heat and water. Heat can cause an explosion. Contact with water can slowly produce flammable Hydrogen gas. Detached storage is preferable. Sources of ignition such as smoking and open flames are prohibited where decaborane is handled, used, or stored.

**Spill and Accident Procedure**

Carbon monoxide and/or carbon dioxide may be given off in a fire. In the event of fire, evacuate and bar further entry.

**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”]**

**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 specific description of procedure.)*

**Note:** Any deviation from this SOP requires written approval from PI.

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

* Prior to conducting any work with the chemical, 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:

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