**Standard Operating Procedure for Laboratories**

 **LEAD COMPOUNDS**

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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) | Lead Compounds:Maximum amount allowed without PI approval: |
| Hazardous Material Storage Location: | Store in a tightly closed container, in cool, dry, well-ventilated area. Keep away from sources of ignition and oxidizing materials. Take measures against static discharge.Store away from incompatible chemicals including the following: ammonium nitrate, chlorine trifluoride, hydrogen peroxide, sodium azide, zirconium, disodium acetylide, sodium acetylide, and oxidizers.Designated Storage Area: |
| Experimental Procedure and Lab Techniques to be Used:  |   |
| Hazard Identification: (i.e., physical/health hazards) | **CAS #** **GHS Classification: Acutely toxic. Carcinogen. Reproductive Toxin. Very toxic to aquatic life with long lasting effects.*** Poison.
* The rout of poisoning depends on a compound.
* Organic lead compounds (like lead theraethyl) easily absorbed through skin, when inorganic lead most likely to be inhaled.
* Can affect nervous system, blood system, kidneys.
* Lead is a cumulative poison.
* Toxicity of various lead compounds depend on solubility in body fluids, size of the particles (fine particle will go through almost all membranes), conditions under which compound is being used (keeping powder lead dump will keep airborne contamination to a minimum). Lead carbonate, monoxide and sulfate are considered to be more toxic that metallic lead or other lead compounds. Lead arsenate is very toxic due to arsine radicals. Organolead compounds are rapidly absorbed by the respiratory and gastrointestinal systems and through the skin. Tetraethyl lead is converted in the body to triethyl lead which is more severe neurotoxin than inorganic lead. Powder compounds are flammable/ moderately explosive, when exposed to heat or flame. Incompatible with sodium azide, zirconium, disodium acetylide.
* Can react vigorously with oxidizing materials. Violent reaction on ignition with chlorine trifluoride, concentrated hydrogen peroxide, ammonium nitrate, sodium acetylade.
* When heated to decomposition it emits toxic fumes of lead.

Review MSDS/SDS prior to working with chemical. |
| Engineering Controls: (chemical fume hood, biosafety cabinet, glove box) | Use only in a chemical fume hood with adequate exhaust. Safety showers and eye wash must be readily available.  |
| Protective Equipment: | Always handle with gloves. Nitrile or chloroprene gloves are sufficient. Wear safety glasses with side shields, faceshield may be recommended. Wear flame resistant lab coat, long pants and closed-toe shoes.Check with glove manufacturer for more info. |
| Waste Collection/Disposal Method: | Waste should be collected in tightly closed one-quart container, in secondary containment and in a designated location inside a fume hood. Affix and complete hazardous waste label. Contact REHS for waste pick up. <https://halflife.rutgers.edu/forms/hazwaste.php> |
| Spill Management:  | Avoid dust formation, keep spill dump. Avoid breathing dust, vapors or mist. Ensure adequate ventilation. Evacuate personnel to safe areas. Sweep up without creating dust and arrange disposal. Do not let it enter drains.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: Flush eyes with warm water for 15 min. Consult a physician.Skin: Flush affected skin with plenty of water and mild soap. Cover the contaminated skin with an anti-bacterial cream. Seek medical attention.Inhalation: Remove to fresh air. If breathing is difficult give oxygen. Seek medical attention.Ingestion: Rinse mouth with water. Seek medical attention. |

**Training**

* Prior to conducting any work with lead compounds, 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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| Click here to enter text. | Click here to enter text. |  |

**LEAD COMPOUNDS**

**Acutely toxic. Carcinogen. Reproductive Toxin. Very toxic to aquatic life with long lasting effects.**

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**FIRST AID**

**Eyes**: Flush eyes with warm water for 15 min. Consult a physician.

**Skin**: Flush affected skin with plenty of water and mild soap. Cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

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

**Ingestion**: Rinse mouth with water. Seek medical attention**.**

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