**Standard Operating Procedure**

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| **Chemical name/class:** | **Lead** | **CAS #: 7439-92-1** |
| **PI:** |  | **Date:** |
| **Building:** |  | **Room #:** |

1. **Circumstances of Use:**

***This SOP must be customized for each lab using Lead. Use this section to describe the circumstances of use, including concentration and quantity as well as identification of a designated work area.***

2. **Potential Hazards:**

 Lead is an **acute toxin** via oral, skin, and inhalation, affecting the nervous, blood, liver, and kidney systems, among

others. Symptoms of exposure include irritation, nausea, headache, and difficulty breathing.

 Lead is a **chronic toxin** with repeated exposures, even at very low concentrations.

 Lead is a **reproductive toxin**, causing extensive damage to the unborn fetus. Lead is also a **possible carcinogen**.

 The OSHA Permissible Exposure Limit for Lead is 30 micrograms/m3 over an 8 hour day.

 For more information, refer to *Prudent Practices in the Laboratory* (National Academies Press)

<http://www.nap.edu/read/4911/chapter/14#346>

3. **Engineering Controls:**

 Lead should only be utilized if absolutely necessary. Substitute the use of Lead for other metals where possible.

* Any activities that lead to airborne lead fumes or dust should be conducted in a chemical fume hood or controlled by utilizing other local exhaust ventilation systems.

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| 4. | **W** | **ork Practice Controls:** |
|  |  | ***Laboratory-specific written procedures are required for work with Lead, including a designated work area****.* |
|  |  | ***It is expected that only competent persons with specific training and experience will be handling Lead in such a way that it creates an exposure hazard, such as lead soldering.*** |
|  |  | Avoid breathing dust/fumes. Do not eat or drink when using this product. |
|  |  | Use personal protective equipment (PPE) as required. |

5. **Personal protective equipment (PPE):**

 PPE: Safety glasses, nitrile gloves, and full length lab coats are recommended when handing Lead. Respiratory protection is generally not practical in most situations, with reliance on engineering controls most acceptable.

* If a respirator is required, a full face particle respirator N100 or type P3 cartridges should be used.

6. **Transportation and Storage:**

* Store Lead away from incompatibles. Keep away from food and beverages.
* Avoid storage near extreme heat or open flames.
* DOT Class 9 – Miscellaneous hazard class.

7. **Waste Disposal:**

Handle and store following the guidelines above while accumulating wastes and awaiting chemical waste pickup. Chemical waste must be disposed of following UNC Charlotte’s Laboratory Chemical Waste Management practices: <http://safety.uncc.edu/laboratory-and-research-safety/hazardous-universal-waste>

8. **Exposures/Unintended contact:**

 Skin: Wash with soap and water. Seek medical advice if irritation sets in.

 Eye: Remove contact lenses. Immediately flush eyes for fifteen minutes. Seek medical advice if irritation sets in or persists.

 Inhalation: Immediately move to fresh air. If breathing is difficult, provide oxygen. Seek medical assistance if

Discomfort or irritation sets in and persists.

 Ingestion: Rinse mouth thoroughly. Do not induce vomiting. Obtain medical attention immediately if discomfort or vomiting persists.

The work-related injury or illness report found at:

https://safety.uncc.edu/services/workers-compensation

9. **Spill Procedure:**

Prevent from reaching drains, sewers, and waterways. Lead should never be discarded in the regular trash. Any soil that is contaminated with Lead should be tested for Lead levels to determine if it is a hazardous waste.

Contact EHS (687-1111) for any environmental contamination that occurs.

10.  **Training of personnel:**

All personnel are required to complete the UNC Charlotte EHS Laboratory Environment Training Checklist. This checklist includes an introduction to general chemical safety as well as review of the laboratory specific safety plan. Furthermore, all personnel shall read and fully adhere to this SOP when handling the chemical.

**“I have read and understand this SOP. I agree to fully adhere to its requirements.”**

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