




SOP for Lead Compounds

Water Reactive (Class III)	CAS number
LEAD CITRATE	512-26-5
LEAD NITRATE	10099-74-8
LEAD(II) NITRATE	10099-74-8

Heading/Approval

Building/Room(s) covered by this SOP:	CD 186A
Department:	Oto-HNS
Principal Investigator Name:	Dr.s Edwin W Rubel and Jennifer Stone
Principal Investigator Signature/Date:	 02/09/2022
This SOP was created by (if not PI): Name/Title/Date/Signature/Date	Robin Gibson, Lab Manager

Section 1 – Chemicals and Hazards

LEAD CITRATE

- Harmful if swallowed or if inhaled.
- May damage the unborn child. Suspected of damaging fertility.
- May cause damage to organs through prolonged or repeated exposure.
- Very toxic to aquatic life with long-lasting effects.





LEAD NITRATE

- Oxidizing solid
 - Nitrogen oxides. Lead oxides. Thermal decomposition can lead to release of irritating gases and vapors. Strong oxidizer. Contact with other material may cause a fire. Poisonous gases may be produced in fire.
- May damage the unborn child. Suspected of damaging fertility.
- Causes serious eye damage.
- May cause damage to organs through prolonged or repeated exposure.
- Very toxic to aquatic life with long-lasting effects.





Section 2 – Process/Protocol

Work under hood.

- Do not inhale substance/mixture.
- Avoid generation of vapors/aerosols.
- Keep product and empty container away from heat
- Avoid dust formation
- Use spark proof tools

Environmental precautions

- Do not let product enter drains.

Hygiene measures

- Immediately change contaminated clothing.
- Apply preventive skin protection.
- Wash hands and face after working with substance.

Lab specific info:

Use this substance in the hood in either CD186A or CD186D wearing appropriate PPE as described below.

Waste material: arrange for pick-up with EH&S.

Do not pour down the drain

Leave chemicals in original containers.

No mixing with other waste.

Handle uncleaned containers like the product itself.

For additional information, consult MSDS

NOTE: Any deviation from this SOP requires approval from Principal Investigator.

Section 3 – Environmental/Ventilation Controls

Use of this material must be conducted in Fume Hood located in CD 186A.

Section 4 –Personal Protective Equipment (PPE)

General Hygiene Measures:

Avoid contact with skin, eyes, and clothing. Wash hands after removing PPE before breaks and immediately after handling the chemical. If **lead compounds** come into contact with any PPE, the PPE shall be immediately removed and discarded properly. Any potentially exposed body parts should be washed immediately.

PPE:

Eye/face protection

- Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Full contact Material: Nitrile rubber

Splash contact Material: Nitrile rubber

Body Protection: a flame-resistant laboratory coat that is NFPA 2112-compliant should be worn.



Respiratory protection required when vapours/aerosols are generated.

Skin and Body Protection. Chemically compatible laboratory coats that fully extend to the wrist must be worn and be appropriately sized for the individual and buttoned to their full length. Personnel must also wear full-length pants, or equivalent, and close-toed shoes. The area of skin between the shoe and ankle must not be exposed.

Hand Protection. Hand protection **IS** required for the activities described in this SOP.

Lab Specific information. Use of nitrile gloves (from Genesee Scientific) will offer short-term splash protection when working with **lead compounds**. In the event of chemical contact, change gloves immediately.

Gloves must be inspected prior to use, including a check for pinholes.

Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands immediately after glove removal.

Eye Protection. eye protection **IS** required for all work with **lead nitrate compounds**.

Respiratory Protection. Respiratory protection **NOT** required for the activities described in this SOP, however, **a dust mask may be worn to minimize exposure to dust particles.** *Work must be conducted in a fume hood.*



Section 5 – Special Handling and Storage Requirements

- Clean the **fume hood** upon completion of tasks with wet brush; avoid making dust
- Place all contaminated disposable items in appropriate laboratory waste for disposal; do not store with combustible material such as wood, paper or sawdust.
- Non-disposable/re-usable utensils, glassware, and other surfaces contaminated with **lead compounds** must be decontaminated at the end of the laboratory work session. Complete this inside **the fume hood** before removing any of the items.
- When work is completed, remove gloves and wash hands with soap and water.

Lab Specific Info: Store **lead compounds** in dessicator in CD186A. Consult with your PI prior to carrying out procedures that involve **lead compound**. Be aware of hazards including environmental toxicity. Discuss appropriate PPE and waste/spill procedures.

Section 6 – Spill and Accident Procedures

Chemical spills must be cleaned up as soon as possible by properly protected and trained personnel. All other persons should leave the area. Clean up spills using contents of the laboratory spill kit.

Do not attempt to clean up any spill if not trained or comfortable. Evacuate the area and call 911 on campus phone for help. If the spill is out of control, call 911. If a person is injured, exposed or suspected of being exposed, call 911. *Follow EXPOSURE PROCEDURES (below).

- For large spills (larger than 100 ml) contact EHS. If in doubt, contact EHS. During normal business hours (Monday – Friday, 8 AM – 5 PM), call EH&S at 206.543.0467 for further assistance. If it is after hours, call 911 for further assistance. Tell them a **lead compounds** spill has occurred.

Spill area must be cleaned up in the following manner: sweep up spilled material with wet brush; avoid generating dust; collect liquids using absorbents; bag up all material for collection by EHS. Keep combustibles; wood, paper oil ect away from spilled material.

Spill cleanup materials must be disposed of in the following manner: **double bag all waste in plastic bags labeled with the contents. Submit request to EH&S for pickup.**

Any spill incident requires the involved person or supervisor to complete and submit the Online Accident Reporting System (OARS) form within 24 hours (8 hours if serious injury or hospitalization) of the incident to EH&S. For questions on spill cleanup, contact EH&S spill consultants at 206-543-0467.

Lab Specific Info: sweep up spilled material with wet brush; avoid generating dust; collect liquids using absorbents in spill kit located in CD186A; bag up all material for collection by EHS. Keep combustibles; wood, paper oil ect away from spilled material.

Exposures: If a person is injured, exposed, or suspected of being exposed to **lead compounds**, follow procedures listed here:



Perform First Aid Immediately

Symptoms of poisoning may occur even after several hours; therefore, medical observation for at least 48 hours after the accident is advised.

- **If inhaled**
 - After inhalation: fresh air.
 - Move out of contaminated area
 - Immediately call a physician.
 - If breathing stops: immediately apply artificial respiration, if necessary, also oxygen.
- **In case of skin contact**
 - Generally, the product does not irritate the skin.
- **For sharps injury (needle stick or subcutaneous exposure):**
 - scrub exposed area thoroughly for 15 minutes using warm water and sudsing soap.
- **In case of eye contact**
 - After eye contact: rinse out with plenty of water.
 - use the eye wash for 15 minutes while holding eyelids open.
 - Remove contact lenses.
- **If swallowed**
 - Immediately call a doctor.

Get Help

- Call 911 or go to nearest Emergency Department (ED); provide details of exposure:
 - Agent
 - Dose
 - Route of exposure
 - Time since exposure
- Bring to the ED the SDS and this SOP
- Notify your supervisor as soon as possible for assistance
- Secure area before leaving; lock doors and indicate spill if needed

Report Incident to Environmental Health & Safety

- Notify EH&S immediately after providing first aid and/or getting help. During business hours (M-F/8-5) call: 206-543- 7262. After hours call: 206-685-UWPD (8973) to be routed to EH&S staff on call.
- For all incidents and near misses, the involved person or supervisor completes and submits the UW Online Accident Reporting System (OARS) form within 24 hours (8 hours if serious injury or hospitalization).

Section 7 – Waste Disposal Procedures

Do not dispose down the drain—**environmental toxin**.

Collect waste in a clearly labeled glass or plastic container with a securely closed/screw top lid.

Call EHS for collection of waste material.

Chemical waste container guidance can be found here: <https://www.ehs.washington.edu/chemical/chemical-container-labels>.

For questions regarding chemical and hazardous chemical collection, visit the EH&S Hazardous Chemical Waste webpage (<https://www.ehs.washington.edu/chemical/hazardous-chemical-waste-disposal>) or call 206.616.5835. Also listed there are contact numbers for hazardous waste disposal.

Collect waste in a clearly labeled glass or plastic container with a securely closed/screw top lid.

Clean up spills as described above and wipe down fume hood with plenty of water after each use.

Section 8 – Special Precautions for Animal Use (___ Yes ___x No)

N/A

PARTICULARLY HAZARDOUS SUBSTANCE INVOLVED?	<u>X</u> YES:	Sections #9 to #11 are Mandatory
	<u> </u> NO:	Sections #9 to #11 are Optional.

Section 9 – Approvals required

All staff working with **lead compounds** must be trained on this SOP prior to starting work.

They must also review the **lead compounds** SDS, and it must be readily available in the laboratory. All training must be documented and maintained by the PI or their designee.

Section 10 – Decontamination

Clean items using dry paper towels first, then wash with sudsy water and rinse with clean water.

Section 11 – Designated Area

Use of **lead compounds** is restricted to the fume hoods in CD 186A and CD 186D

Section 12 – Documentation of Training (signature of all users is required)

- Prior to using substances included in this SOP, laboratory personnel must be trained on the hazards described in this SOP, how to protect themselves from the hazards, and emergency procedures.
- Ready access to this SOP and to a Safety Data Sheet for each hazardous material described in the SOP must be made available in the lab space(s) where these substances are used.
- The Principal Investigator (PI), or Responsible Party, if the activity does not involve a PI, must ensure that their laboratory personnel have attended appropriate laboratory safety training (and refresher training where applicable).



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- Training must be repeated following **any** revision to the content of this SOP. Training **must be documented**. This training sheet is provided as one option; other forms of training documentation (including electronic) are acceptable but records must be accessible and immediately available upon request.

I have read and understand the content of this SOP:

Name	Signature	Date
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