

School Material Safety Data Sheet

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LEAD ACETATE,
TRIHYDRATE
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SECTION 1. INTRODUCTORY INFORMATION

MATERIAL NAME AND FORMULA: LEAD ACETATE, TRIHYDRATE; $Pb(CH_3COO)_2 \cdot 3(H_2O)$

SYNONYMS: Acetic Acid, Lead (II) Salt, Trihydrate; Lead Diacetate, Trihydrate;

Plumbous Acetate; Sugar of Lead

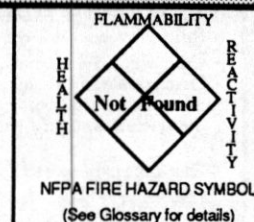
CAS NUMBER: 6080-56-4 (0301-04-2 refers to the anhydrous material)

INGREDIENTS: Lead Acetate, Trihydrate, >99%

DOT CLASSIFICATION: ORM-E (UN1616)

EPA CLASSIFICATION: Toxic Waste; Hazardous Waste Constituent

MANUFACTURERS: Always request Material Safety Data Sheets from your chemical supplier. These should indicate the manufacturer of the substance and include an emergency phone number to call. The Manufacturers section of this book contains a listing of some of the larger manufacturers and available emergency numbers.



DESCRIPTION: Lead acetate is available as white crystals, granules, or powder with a slight acetic (vinegar) odor. Material has a sweet taste. **CAUTION:** Poisonous if swallowed.

PRELIMINARY INFORMATION: This material has been listed as an animal carcinogen. It is highly toxic by inhalation, ingestion, or skin absorption. This is a nonflammable material. The most common area of use would be in the chemistry lab. This material should not be used in schools if alternatives can be found to meet the necessary educational objectives. If its use is deemed necessary, keep amounts used to a minimum and use with great caution.

SECTION 2. USE AND STORAGE INFORMATION

-- PRELIMINARY PLANNING CONSIDERATIONS --

- Safety glasses or goggles and protective clothing (rubberized apron, etc.) should be worn for all experiments.
- Be sure eyewash station and safety shower are in good working order and readily available.
- **Always provide for safe disposal of all chemical waste generated in the lab.** Check applicable regulations prior to use.
- Not recommended for use or storage in schools without an absolute need being determined. Whenever possible, substitute less hazardous materials.
- Review sections 3, 5, and 6 to prepare for possible accidents or emergencies.
- Rubber gloves are recommended when working with this material.

-- USAGE PRECAUTIONS AND PROCEDURES --

- **READ THE LABEL** and follow all precautions.
- Maintain good housekeeping practices to avoid unintentional mixing with incompatible materials and accumulation of dust.
- **For safety, contact lenses should not be worn in the laboratory;** soft lenses may absorb irritants and all lenses may concentrate them. Particles can also adhere to contact lenses and cause corneal damage.
- After working with this material, always wash hands and face thoroughly before eating, drinking, or smoking.
- Avoid creating airborne dust conditions. Provide adequate ventilation.
- Remove contaminated clothing and launder before reuse.
- Do not breathe dust. Prevent eye contact. **DO NOT INGEST!** Avoid skin contact.
- Keep off clothing, textbooks, and personal belongings.
- Clean up spills promptly and completely.

-- ADDITIONAL INFORMATION --

- Lead Acetate does not polymerize. This material is stable at room temperature under normal conditions.
- Incompatible with acids, alkalis, and strong oxidizers. Contact with potassium bromate may cause an explosion. Other incompatible materials include soluble sulfates, citrates, chlorides, carbonates, phosphates, sulfites, salicylic acid, phenol, and tinctures.
- Absorbs CO_2 when exposed to air, reducing solubility.
- Efflorescent material; keep containers closed when not in use.
- Keep away from strong oxidizing agents.

-- PREFERRED STORAGE LOCATION AND METHODS --

- Storage area should be cool and well ventilated. Containers should be tightly closed.
- All chemical containers should be protected from physical damage and kept out of direct sunlight.
- Smoking should not be permitted in areas where chemicals are stored.
- Purchase only amounts equivalent to one year's needs, if at all.
- Should be stored in approved, locked POISONS cabinet. Keep away from incompatibles.

SECTION 3. SPILLS AND DISPOSAL PROCEDURES

IF MATERIAL IS SPILLED:

- Ventilate area of spill.
- Cleanup personnel should wear personal protective equipment as necessary to prevent skin or eye contact and inhalation of dust.
- For liquid (solution) spills, cover material with an inert solid absorbent (vermiculite, dry sand, etc.) and scoop into an appropriate container (with secure lid) for disposal in accordance with existing regulations. Dike with inert absorbent material, as needed, to contain and limit spill area.
- Sweep, vacuum, or scoop up spilled solid, avoiding generation of dust. Place in a suitable container (with secure lid) for later disposal.
- Cleanup methods such as vacuuming (with appropriate filter) or wet mopping will minimize dust dispersion.

DISPOSAL OF SMALL QUANTITIES:

- Lead acetate is a hazardous waste. Landfill disposal is not recommended for soluble lead salts.
- Contact your supplier or a licensed chemical waste disposal contractor for specific treatment/disposal procedures.
- **Do not** flush down drains.

DISPOSAL OF LARGER AMOUNTS: Contact a licensed disposal company.

FOLLOW ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS FOR ALL WASTE DISPOSAL

SECTION 4: HEALTH HAZARDS

Certain lead salts, including lead acetate, have been identified as animal carcinogens by the NTP and IARC. The IARC classifies the evidence for carcinogenicity of lead and lead compounds as "inadequate."

Current OSHA PEL: 8-hr. TWA: 0.05 mg/m³ as Pb (active level of 0.03 mg/m³),
Current ACGIH TLV: 8-hr. TWA: 0.15 mg/m³ as Pb (for inorganic lead; although not defined in the ACGIH TLV documentation, other standards [OSHA, NIOSH] include organic lead salts as inorganic lead).

- Rat, Oral, LDLo: 11 g/kg.
- Rat, Intravenous, LD₅₀: 140 mg/kg.
- Guinea Pig, Subcutaneous, LDLo: 2100 mg/kg.
- Lead acetate trihydrate can enter the body by inhalation, ingestion, and possibly by skin absorption. Its chief effects would be identical to chronic intoxication; i.e., anemia, neurological disorders, and kidney damage. Symptoms of the neurological effects may include irritability, headaches, insomnia, delirium, convulsions, muscular tremors, and palsy of the extremities.
- Excessive exposure to lead may also have adverse effects on human reproductive capabilities.
- On ingestion, symptoms include headache, abdominal pain, nausea, diarrhea, vomiting, and, in severe cases, coma and death.
- Any person who shows symptoms of lead poisoning should be removed from existing exposure and receive medical care.

SECTION 5: FIRST AID PROCEDURES

Eye contact:

- Flush eyes promptly with plenty of gently running water for at least 15 minutes, including under the eyelids.
- Get prompt medical attention.*

Skin contact:

- Remove contaminated clothing promptly.
- Wash exposed areas of skin with soap and water.
- Get medical attention if irritation develops.*

Inhalation:

- Remove victim to fresh air; restore and/or support breathing as necessary.
- Get prompt medical attention.*

Ingestion:

- Get prompt medical attention.*
- Give several glasses of milk or water to drink. Induce vomiting -- but ONLY if victim is conscious and alert. Keep victim warm and at rest.
- Never give anything by mouth to a person who is unconscious or convulsing.

* Get medical help (in school, paramedic, or community) for further treatment, observation, and support after first aid.

SECTION 6: FIRE PROCEDURES AND DATA

- Lead acetate trihydrate is nonflammable. Remove containers of this material from fire area where it is safe to do so.
- Material begins to decompose at 212°F (100°C). Decomposition is complete at 392°F (200°C).
- Extinguishing media: Use media appropriate to surrounding fire conditions. Prevent runoff of water containing this water-soluble substance to sewers or waterways.
- For major fires, or if large quantities of this material are involved, fire fighters should wear appropriate protective clothing and use respiratory protection. Self-contained breathing apparatus is recommended.
- A water spray may be used to cool fire-exposed containers and disperse vapors.

THERMAL DECOMPOSITION PRODUCTS: Acetic acid (irritating and flammable) and other gases such as carbon monoxide (CO) and carbon dioxide (CO₂).

FLASH POINT AND METHOD(S) ... Not Found

AUTOIGNITION TEMPERATURE ... Not Found

FLAMMABILITY LIMITS IN AIR (vol. %) : Not Found

SECTION 7: PHYSICAL DATA

BOILING POINT (@ 1 atm) ... 392°F (200°C) Decomposes

VAPOR PRESSURE (@ 15°C, mm Hg) ... Negligible

SOLUBILITY IN WATER (@ 20°C) ... 45.61 g/100 cc (@ 100°C ... 200 g/100 cc)

pH OF AQUEOUS SOLUTION (5 %) ... 5.5 to 6.5

SPECIFIC GRAVITY ... 2.55

MELTING POINT ... 167°F (75°C) (-H₂O)

FORMULA WEIGHT ... 379.33

DATA SOURCES: Genium's Industrial MSDS #183 (4/86) and references 2, 4, 5, 9, 12, 14, 20, 44, 55, 57, 58, 61, 62, 80, 82, 84, 501, 506, 509-11.
(see glossary for titles)

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Medical Review