

LEAD ACETATE (TRIHYDRATE)

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:

LEAD ACETATE (TRIHYDRATE)
Synonyms: Lead(II) acetate trihydrate; Sugar of lead; Plumbous acetate
CAS: 6080-56-4

Other means of identification:

Not relevant

1.2 Recommended use of the chemical and restrictions on use:

Relevant uses: Laboratory reagent, analytical chemistry (lead acetate paper), mordant/dyeing auxiliary, intermediate in manufacture of other lead compounds, industrial chemical processing. For industrial/laboratory user only.
Uses advised against: Any consumer, cosmetic, food-contact, or pharmaceutical use. All uses not specified in this section or in section 7.3.

1.3 Supplier's details:

SURAJ CHEMICALS
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1.4 Emergency phone number:

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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), per the established harmonized classification for lead acetate.

Repr. 1A	Reproductive toxicity, Category 1A, H360FD
Muta. 2	Germ cell mutagenicity, Category 2, H341
Carc. 2	Carcinogenicity, Category 2, H351
Acute Tox. 4	Acute oral toxicity, Category 4, H302
STOT RE 2	Specific target organ toxicity, repeated exposure, Category 2, H373
Aquatic Acute 1	Hazardous to the aquatic environment, acute hazard, Category 1, H400

2.2 GHS label elements, including precautionary statements:

GHS: Danger

Hazard statements:

H360FD – May damage fertility. May damage the unborn child.
H341 – Suspected of causing genetic defects.
H351 – Suspected of causing cancer.
H302 – Harmful if swallowed.
H373 – May cause damage to organs (kidney, blood, nervous system) through prolonged or repeated exposure.
H400 – Very toxic to aquatic life.

Precautionary statements:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P314: Get medical advice/attention if you feel unwell.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local/national regulations on hazardous waste.

2.3 Other hazards which do not result in classification:

Contains lead; chronic exposure is associated with cumulative toxic effects (see section 11). Not expected to meet PBT criteria under current assessment methods, though bioaccumulation of lead in organisms is well documented.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

Chemical description: Lead(II) Acetate Trihydrate, Pb(CH₃COO)₂·3H₂O
In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 6080-56-4	Lead Acetate Trihydrate — Repr. 1A: H360FD; Muta. 2: H341; Carc. 2: H351; Acute Tox. 4: H302; STOT RE 2: H373; Aquatic Acute 1: H400 – Danger	≥ 99% (typical commercial/analytical grade)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

3.2 Mixtures:

Non-applicable

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:
Request medical assistance immediately, showing the SDS of this product.

By inhalation:
Remove the person affected from the area of exposure, provide fresh air and keep at rest. Seek medical attention if symptoms occur or persist.

By skin contact:
Remove contaminated clothing and footwear. Wash skin thoroughly with soap and water. Seek medical advice if irritation persists.

By eye contact:
Rinse eyes thoroughly with lukewarm water for at least 15 minutes, lifting upper and lower eyelids. Remove contact lenses if present and easy to do. Seek medical attention.

By ingestion/aspiration:
Do not induce vomiting. Rinse mouth with water. Seek immediate medical attention/call a Poison Control Centre, showing the SDS of this product.

4.2 Most important symptoms/effects, acute and delayed:
Acute: gastrointestinal discomfort, nausea, abdominal pain. Delayed/chronic: accumulation of lead may cause anaemia, kidney damage, and neurological/reproductive effects (see sections 2 and 11).

4.3 Indication of immediate medical attention and special treatment needed, if necessary:
Treat symptomatically. In cases of suspected significant exposure, blood lead level monitoring and chelation therapy may be considered by a physician.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:
Suitable: Water spray, foam, dry chemical powder, carbon dioxide – select based on surrounding fire.
Unsuitable: None known

5.2 Specific hazards arising from the chemical:
Non-combustible inorganic solid. On heating/combustion of surrounding materials, may emit toxic lead oxide fumes and acetic acid vapours.

5.3 Special protective actions for fire-fighters:
Wear self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes and inhalation of fumes.

Additional provisions:
Contain fire-fighting water run-off; do not allow to enter drains or watercourses due to aquatic toxicity.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
For non-emergency personnel:
Avoid generating and inhaling dust. Avoid skin and eye contact. Use personal protective equipment described in section 8. Evacuate unprotected personnel.

For emergency responders:
Wear appropriate PPE including respiratory protection. Keep unprotected persons away.

6.2 Environmental precautions:
Prevent entry into drains, watercourses and soil – very toxic to aquatic life. Notify relevant authorities in case of significant environmental release.

6.3 Methods and materials for containment and cleaning up:
Carefully sweep/vacuum up (avoid dust generation) and place in a suitable, labelled, closed container for disposal as hazardous waste. Do not flush with water into drains.

6.4 Reference to other sections:
See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:
A. General precautions for safe use:
Avoid generating and breathing dust. Avoid all skin and eye contact. Handle in a well-ventilated area or under local exhaust ventilation. Do not eat, drink or smoke while handling.

B. Technical recommendations for the prevention of fires and explosions:
Non-combustible; no special fire precautions required beyond general good practice.

C. Technical recommendations on general occupational hygiene:
Wash hands and exposed skin thoroughly after handling and before eating, drinking or smoking. Launder contaminated clothing before reuse.

D. Technical recommendations to prevent environmental risks:
Prevent discharge to drains, soil and watercourses. Use dedicated containment for spills and waste.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Minimum Temp.	Ambient
Maximum Temp.	Ambient (cool, dry conditions)
Maximum time	Typical value – refer to current specification sheet

B. General conditions for storage:
Store in tightly closed, labelled containers in a dry, well-ventilated, locked area away from food, feed, incompatible materials and direct sunlight. For additional information see subsection 10.5.

7.3 Specific end use(s):
Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:
Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948, as amended, and generally referenced international occupational exposure limits for lead and inorganic lead compounds:

Identification	Occupational Exposure Limit Type	Value
Lead Acetate Trihydrate CAS: 6080-56-4	Time Weighted average (8 hrs), as Pb	0.05 mg/m³ (typical reference value for inorganic lead compounds)

8.2 Appropriate engineering controls:
Use local exhaust ventilation/dust-collection to keep airborne concentrations below occupational exposure limits. Provide washing facilities and designated clean/dirty change areas where handling is routine.

B. Respiratory protection:
Use a particulate respirator (P2/P3 or equivalent) where dust generation cannot be adequately controlled by engineering measures.

C. Specific protection for the hands:
Chemical-resistant protective gloves (e.g. nitrile). Replace at any sign of damage.

D. Eye and face protection:
Safety goggles or face shield to prevent dust/particle contact with eyes.

E. Bodily protection:

Protective coveralls/work clothing; launder separately from personal clothing. Safety footwear recommended.

F. Additional emergency measures:

Emergency shower and eyewash stations should be available in the work area.

Environmental exposure controls:

Prevent environmental discharge of product, dust and contaminated wash-water. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (crystals/powder)
Appearance	White crystalline solid, efflorescent
Color	White
Odor	Faint acetic (vinegar-like) odour
Odour threshold	Not relevant *
Volatility	
Boiling point at atmospheric pressure	Decomposes before boiling
Vapour pressure at 20°C / 50°C	Negligible
Evaporation rate at 20°C	Not relevant *
Product Description	
Density / Relative density at 20°C	≈2.55 g/cm³
Dynamic / Kinematic viscosity	Not relevant *
Concentration	≥99% (typical)
pH	≈5.5–6.5 (aqueous solution, 50 g/L)
Vapour density at 20°C	Not relevant *
Partition coefficient n-octanol/water 20°C	Not relevant *
Solubility in water at 20°C	Soluble, ≈440 g/L
Decomposition temperature	≈75°C (loses water of crystallisation); decomposes >200°C
Melting point/freezing point	≈75°C (with loss of water)
Flammability	
Flash Point	Non-applicable
Flammability (solid, gas)	Non-flammable
Autoignition temperature	Not relevant *
Lower / Upper flammability limit	Not relevant *
Particle Characteristics	
Median equivalent diameter	Typical value – refer to current specification sheet

* Not relevant due to the nature of the product, not providing information on the properties of its hazards.

9.2 Other information:

Explosive properties	Not relevant *
Oxidising properties	Not an oxidiser
Corrosive to metals	Not corrosive
Heat of combustion	Not relevant *
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Stable under normal conditions. Reacts with strong acids, sulfides, sulfates, carbonates, chromates and phosphates to form insoluble lead salts. Incompatible with strong oxidising agents.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use. Efflorescent; loses water of crystallisation on exposure to dry air.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions are not expected. Avoid contact with strong oxidisers and sulfur-containing compounds.

10.4 Conditions to avoid:

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Efflorescence possible	Avoid – decomposition above 200°C	Avoid prolonged exposure	Avoid high humidity (caking)

10.5 Incompatible materials:

Strong Oxidisers	Sulfides/Sulfates	Carbonates/Phosphates	Strong Acids	Chromates
Avoid contact	Forms insoluble precipitate	Forms insoluble precipitate	May liberate acetic acid vapour	Forms insoluble precipitate

10.6 Hazardous decomposition products:

Thermal decomposition may release toxic lead oxide fumes and acetic acid/acetone vapours.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

In case of exposure that is repetitive, prolonged, or at concentrations higher than the recommended occupational exposure limits, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect):

Harmful if swallowed (H302). May cause gastrointestinal irritation, nausea, vomiting, abdominal pain.

B. Inhalation (acute effect):
Inhalation of dust may cause irritation of respiratory passages; repeated exposure contributes to systemic lead absorption.

C. Contact with skin and eyes (acute effect):
May cause mild irritation on contact; not classified as a skin/eye corrosive or irritant per current criteria, but prolonged contact should be avoided.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):
Classified Repr. 1A (H360FD) – may damage fertility and the unborn child; Muta. 2 (H341) – suspected of causing genetic defects; Carc. 2 (H351) – suspected of causing cancer. IARC: Inorganic lead compounds classified as Group 2A (probably carcinogenic to humans).

E. Sensitizing effects:
Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:
Classification criteria are not met based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure:
Classified STOT RE 2 (H373) – may cause damage to organs (kidney, blood-forming system, nervous system) through prolonged or repeated exposure, consistent with the well-documented toxicological profile of lead.

H. Aspiration hazard:
Not applicable (solid).

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Lead Acetate Trihydrate CAS: 6080-56-4	LD50 oral: ≈200 mg/kg	Rat
	LD50 dermal: Not established	–

SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic life.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: <1 mg/L (96h), as Pb (typical range for soluble lead salts)	Non-applicable	Fish
EC50: <1 mg/L (48h), as Pb (typical range for soluble lead salts)	Non-applicable	Crustacean

12.2 Persistence and degradability:
Inorganic substance; biodegradability concept not applicable. Lead ion persists in the environment.

12.3 Bioaccumulative potential:
Lead is known to bioaccumulate in aquatic organisms and the food chain.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not relevant	Not relevant	Moderate (binds to soil particles)	Moderate

12.5 Results of PBT and vPvB assessment:
Lead compounds are not formally assessed under standard organic PBT/vPvB criteria (inorganic substance), but lead is recognised as persistent and bioaccumulative in the environment.

12.6 Other adverse effects:
Not described

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:
Dispose of as hazardous waste (heavy-metal-bearing) through a licensed hazardous waste contractor/TSDF in accordance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules. Do not discharge to drains or water bodies. For packaging: use dedicated containers; do not rinse into general drains.
Refer to national and local regulations on waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead Acetate)
14.3 Transport hazard class(es)	9 (Label: 9)
14.4 Packing group	III
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead Acetate)
14.3 Transport hazard class(es)	9 (Label: 9)
14.4 Packing group	III
14.5 Marine pollutant	Yes
14.6 Special precautions for user	EmS Codes: F-A, S-F
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	UN3077
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Lead Acetate)
14.3 Transport hazard class(es)	9 (Label: 9)
14.4 Packing group	III
14.5 Environmental hazard	Yes
14.6 Special precautions for user	Physico-chemical properties: see section 9

14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant
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SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

- Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
- The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
- Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016
- The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

- H302: Harmful if swallowed.
- H341: Suspected of causing genetic defects.
- H351: Suspected of causing cancer.
- H360FD: May damage fertility. May damage the unborn child.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.*

Advice related to training:

Personnel handling this product should receive training on lead toxicity, safe handling practices, and the use of personal protective equipment, to ensure correct interpretation and application of this safety data sheet and the product label.

Principal bibliographical sources:

The United Nations Economic Commission for Europe (UNECE); publicly available harmonized GHS/CLP classification references for CAS 6080-56-4 (lead acetate).

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer | STOT RE: Specific target organ toxicity – repeated exposure

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET