Safety Data Sheet LEAD ACETATE

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SECTION 1: Identification

GHS Product identifier

Product name	LEAD ACETATE

Other means of identification

LEAD ACETATE Trihydrate AR
LEAD (II) ACETATE
Sugar of lead

Recommended use of the chemical and restrictions on use

Used in the preparation of basic lead carbonate, lead chromate and lead salts of higher fatty acids; as a mordant in cotton dyes; as a water repellant; as a component in combined toning and fixing baths for daylight printing papers and for treating awnings and outdoor furniture to prevent removal of mildew and rot-proofing agents by rain or laundering; used in the preparation of rubber antioxidants; as a processing agent in the cosmetic, perfume and toiletry industries; as a component of colouring agents for adhesives; antifouling paints; and in the preparation of organic lead soaps used as driers of paints, varnishes and inks; gold cyanidation process; insecticide; analytical reagent; hair dye; lead coating for metals; weighting silks; and laboratory reagent.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, inhalation, Cat. 4
- Acute toxicity, oral, Cat. 4
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1
- Toxic to reproduction, Cat. 1
- Specific target organ toxicity following repeated exposure, Cat. 2

GHS label elements, including precautionary statements

Pictograms

Signal word **Warning**

Hazard statement(s)

H302	Harmful if swallowed
H332	Harmful if inhaled
H360	May damage fertility or the unborn child [effect, route]
H373	May cause damage to organs through prolonged or repeated exposure [route]
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physcian if you feel unwell,
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor/physcian if you feel unwell.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Substances

Molecular weight: 379.33

Components

Component	CAS no.	Concentration
LEAD ACETATE TRIHYDRATE	6080-56-4	100 % (weight)

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.
In case of skin contact	Immediately remove contaminated clothing and wash affected area with water for at least 15 minutes. Ensure contaminated clothing is washed before re-use. Seek immediate medical advice /attention depending on the severity.
In case of eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open.In all cases of eye contamination it is a sensible precaution to seek medical advice.
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

Lead acetate can accumulate in the body and cause significant long-term health effects. Medical advice should be sought following any exposure.

Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Use fire extinguishing media appropriate for surrounding environment. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Specific hazards arising from the chemical

Acrid smoke, irritating or toxic and corrosive fumes (or gases), including lead or lead oxides, acetic acid, carbon monoxide and carbon dioxide.
Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Runoff may pollute waterways.

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid inhalation, contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.
Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

Sweep up (avoid generating dust) and using clean non-sparking tools transfer to a clean, suitable, clearly labelled container for disposal in accordance with local regulations.
Seek expert advice on handling and disposal.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid ingestion and inhalation of dusts. Avoid contact with skin, eyes and clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep containers closed when not in use. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Wear suitable protective clothing. Wash thoroughly after handling. Contaminated clothing should be removed and washed before re-use. Avoid exposure of (pregnan) women! Ensure a high level of personal hygiene is maintained when using this product. Under no circumstances eat, drink or smoke while handling this material. Keep away from incompatibles chemicals.

Conditions for safe storage, including any incompatibilities

Store in original, labelled, tightly closed containers, in a cool, dry, well-ventilated area away from incompatible substances. Separated from bromates, carbonates, phosphates, phenols, food and feedstuffs, oxidising agents, soluble sulfates, citrates, tartrates, chlorides, alkalies, tannin, resorcinol, salicylic acid, chloral hydrate, sulfites, vegetable infusions, tinctures. May decompose on exposure to light. Absorbs carbon dioxide from air. Protect against physical damage, direct sunlight and moisture. Areas in which exposure to lead metal or lead compounds may occur should be identified by signs or appropriate means, and access to the area should be limited to authorised persons. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Corrosivity to Metals: Dry lead acetate is probably not corrosive. Lead acetate solutions are corrosive to gray cast iron, steel and aluminium at normal temperatures, and to copper, bronze and brass at higher temperatures (93 °C).

Recommended Materials: Glass or plastic containers; plastic or metal drums; metal can.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 6080-56-4

LEAD ACETATE TRIHYDRATE
AU/SWA (Australia): 0.15 mg/m3 TWA inhalation

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: Clean clothing or protective clothing should be worn, preferably with and apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	White or colourless crystalline solid, flakes, granules or powder; brown or grey lumps. Slowly effloresces.
Color	No data available.
Odor	Slight acetic acid odour.
Odor threshold	No data available.
Melting point/freezing point	75 °C.
Boiling point or initial boiling point and boiling range	Decomposes at 200 °C.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Not considered to be an explosion hazard. Danger of dust explosion in finely distributed form. Well-sealed containers may rupture violently when exposed to fire or excessive heat for sufficient time.
Auto-ignition temperature	No data available.
Decomposition temperature	> 200 °C.
Oxidizing properties	No data available.
pH	5.5-6.5 (5% aqueous solution at 25 °C). Acidic.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: Very soluble (45.61 g/100 mL at 15 °C). Takes up carbon dioxide from the air and becomes incompletely soluble. Solubility in Organic Solvents: Freely soluble in glycerol. Insoluble in ethanol. Aqueous solutions of lead acetate dissolve lead monoxide.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	Negligible.
Evaporation rate	Not available. Probably very low at normal temperatures.
Density and/or relative density	Specific Gravity: 2.55.
Relative vapor density	13.1.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Index of refraction: 1.567 (Beta).
Taste: Intensely sweet taste.
Bulk density: ca. 1.200 kg/m^3.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable under ordinary conditions of use and storage. Air sensitive. Slowly effloresces in air. Readily absorbs carbon dioxide from the air. May decompose on exposure to light or excessive heat, releasing water of crystallization when heated. Above 100 °C, it begins to lose some acetic acid and it decomposes completely at 200 °C.

Possibility of hazardous reactions
Reaction with strong oxidizing agents (e.g. perchlorates, peroxides) may be violent and may cause fire and explosion. Reaction with strong acids (e.g. sulfuric acid) may be vigorous or violent, giving off acetic acid. Reaction with strong bases (e.g. sodium hydroxide, potassium hydroxide) may be vigorous or violent. Reacts with potassium bromate to form the lead acetate-lead bromate double salt, which is explosive and very sensitive to friction. Reacts violently with phosphates, carbonates, phenols. Avoid reaction with soluble sulfates, citrates, tartrates, chlorides, tannin, resorcinol, salicylic acid, chloral hydrate, sulfites, vegetable infusions, and tinctures.

Conditions to avoid
Heat, flames, ignition sources, high temperatures, light, dust and mist generation, exposure to air and incompatible materials.

Incompatible materials
Strong oxidizing agents (e.g. perchlorates, peroxides), strong acids (e.g. sulfuric acid), strong bases (e.g. sodium hydroxide, potassium hydroxide), potassium bromate in acetic acid, bromates, phenols, alcohols, chloral hydrate, sulfides, hydrogen peroxide, resorcinol, salicylic acid, sulfites, vegetable infusions, tannin, phosphates, citrates, chlorides, carbonates, tartrates, tinctures, soluble sulfates, strong reducing agents; gray cast iron, steel and aluminium at normal temperatures; copper, bronze and brass at higher temperatures (93 °C).

Hazardous decomposition products
Toxic and corrosive fumes of lead or lead oxide, acetic acid, carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
NICNAS: Lead acetates: Human health tier II assessment

Acute Toxicity - Oral: LD50 (rat): 4665 mg/kg (RTECS)

Ingestion: Harmful if swallowed. May cause moderate to severe gastrointestinal tract irritation with abdominal pain and spasms, nausea, vomiting, headache and diarrhoea. Symptoms of ingestion of a very large dose over a short time period may include headache, fatigue, nausea, abdominal cramps, and joint pain. Acute poisoning can cause or lead to vomiting and constipation or bloody diarrhoea, joint and muscle pain, weakness of the extensor muscles (frequently the hand and wrist), depression, <qt>lead line<qt> on the gums, metallic taste in the mouth, definite loss of appetite, insomnia, dizziness, possible convulsions, high lead levels in blood and urine with shock, coma and death in extreme cases. May affect behaviour/brain, metabolism, liver, cardiovascular system, urinary system, and blood. Exposure may cause anaemia and other blood abnormalities. High body levels produce increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death. If left untreated, neuromuscular dysfunction, possible paralysis, and encephalopathy can result. The following applies to lead compounds in general: due to the poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication.

Inhalation: May be harmful if inhaled. Inhalation of dusts may cause irritation of the nose, throat and respiratory system (local irritation of the bronchia, and lungs). Symptoms such as metallic taste, chest and abdominal pain, and increased lead blood levels may follow. Effects such as headache, fatigue, joint pain, nausea, vomiting, abdominal cramps and constipation or bloody diarrhea may occur upon inhalation of large amounts. Lead can be absorbed through the respiratory system. See symptoms of ingestion. Lead accumulates in the body and inorganic lead compounds are well known to cause significant health effects following chronic exposure. If a significant amount of lead has accumulated in the body, symptoms of long-term toxicity may develop after what may seem to be a short-term acute exposure. See Chronic Effects.

Skin corrosion/irritation

Inorganic lead compounds are not known to cause skin irritation and are poorly absorbed through the skin. Open cuts, abraded or irritated skin should not be exposed to this material. Contact over short periods may cause local irritation, redness and pain. May be harmful if absorbed through the skin on prolonged exposure. See symptoms for ingestion.

Serious eye damage/irritation

Concentrated solutions or high levels of dust or fumes may cause eye irritation or abrasion, with redness, tearing, stinging, blurred vision, temporary impairment of vision and/or other transient eye damage/ulceration. Absorption may occur through eye tissues.

Respiratory or skin sensitization

Lead acetate is not known as a skin sensitizer.

Germ cell mutagenicity

Mutagenic effects have occurred in experimental animals.
Lead acetate (II), trihydrate (CAS # 6080-56-4): DNA inhibition system-mouse-intraperitoneal: 20 g/kg (<qt>Dangerous Properties of Industrial Materials<qt>, 7th Ed., by N. Irving Sax and Richard J. Lewis).

Carcinogenicity

Lead compounds, inorganic are evaluated in the IARC Monographs (Vol. 87; 2006) as Group 2A: Probably carcinogenic to humans.

Reproductive toxicity

Toxic to Reproduction: Category 1A

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

H373 May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Lead is a cumulative poison and exposure even to small amounts can raise the body's content to toxic levels. Long-term health effects of inorganic lead compounds, including lead acetate, are similar following inhalation or ingestion. Long-term lead toxicity is commonly referred to as <qt>plumbism<qt> and may include effects on the nervous system (forgetfulness, irritability, tiredness, headache, fatigue, impotence, decreased libido, dizziness, depression, encephalopathy, behavioural effects, altered mood states, disturbances in hand-eye coordination, reaction times, visual motor performance, and mental performance, disturbances to vision, changes in hearing, weakness of the arms and legs and weakness and paralysis of the wrist, fingers and ankles, decreased hand dexterity, footdrop and wristdrop), heart/blood vessels (reduced haemoglobin production and reduced life span and function of red blood cells, anaemia, increased blood pressure), digestive system (loss of appetite, inflammation of the stomach walls (gastritis) and colic, with severe abdominal pain, cramps, nausea, vomiting, constipation, anorexia (loss of appetite), weight loss and decreased urination, deposition of blue lead-line on the gums), kidneys/urinary system (reversible/irreversible kidney damage) and endocrine system.

[3W] Other Information: Toxicologically Synergistic Materials: Significantly increased kidney toxicity was reported in rats given lead acetate and selected nitroso- or amide-type chemicals. Nutritional status and exposure to other metals such as calcium, phosphorous, iron, zinc and copper may influence lead absorption and toxicity.

Potential for Accumulation: Inorganic lead compounds are absorbed into the body following inhalation or ingestion. Inorganic lead compounds are poorly absorbed through the skin. Once absorbed, inorganic lead compounds are distributed throughout the body. They can readily cross the placenta, reaching the unborn child. The majority of absorbed lead is excreted in the urine and faeces. Small amounts are also excreted in sweat, hair, fingernails and breast milk. Some lead is not excreted, but is stored in the bones and accumulates in the body. It can take more than 20 years for half of the inorganic lead in the bones to be removed from the body after the last exposure to lead. Lead which is released from the bones can cause health effects, even if there is no current exposure to lead. In some cases, lead can be rapidly released from the bones because of fractures, infections or other stresses on the body.

LEAD ACETATE TRIHYDRATE: *TOXICITY:
typ. dose mode specie amount units other
LDLo ipr rat 200 mg/kg
LD50 ipr mus 174 mg/kg
LDLo scu gpg 2100 mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:
THR: Poison by intraperitoneal route. Moderately toxic by subcutaneous
route. An experimental carcinogen and teratogen. Experimental
reproductive effects. Mutation data.

*CARCINOGENICITY:
Tumorigenic Data:
TDLo: orl-rat 8524 mg/kg/78W-C
Review: IARC Cancer Review: Animal Inadequate Evidence
IARC Cancer Review: Human Inadequate Evidence
IARC: Not classifiable as a human carcinogen (Group 3) [395]

*MUTATION DATA: See RTECS printout for data

*TERATOGENICITY: See RTECS printout for data

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: None
ACGIH: None
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): None
Flammability (F): None
Reactivity (R): None

*OTHER TOXICITY DATA:
Review: Toxicology Review-2
Human lethal dose (bone): 4.53 mg/100 g (adult); 17.0 mg/100 g (child) [051]

SECTION 12: Ecological information

Toxicity

Formation of health-hazardous mixtures possible with water. Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. The following applies to lead compounds in general: Hazard for drinking water.

[8X] Acute Toxicity - Fish: Fish

Acute Toxicity
Endpoint 96 h LC50 = 108 µg Pb/L

Experimental
Pimephales promelas (fathead minnow) ASTM Method; Flow through $CaCO_3$ = 43.9 mg/L, pH = 7.4

Chronic Toxicity

Endpoint NOEC = 5.65 µg Pb/L

Experimental
Lepidomeda vittatus (Little Colorado spinedace) $CaCO_3$ = 30 mg/L

[8Z] Acute Toxicity - Algae: Algae

Acute Toxicity
Endpoint 8 h EC50 = 23.1 µg Pb/L

Experimental
Pseudokirchneriella subcapitata (green algae) OECD TG 201; Static $CaCO_3$ = 24 mg/L, pH = 7.3
Reduced growth rate observed

Chronic Toxicity
Endpoint 48 h EC10 = 4.5 µg Pb/L

Experimental
Pseudokirchneriella subcapitata (green algae) OECD TG 201; Static $CaCO_3$ = 24 mg/L, pH = 7.3
Reduced growth rate observed

[91] Acute Toxicity - Other Organisms: Acute Toxicity
Invertebrates
48 h LC50 = 73.6 µg Pb/L

Experimental
Ceriodaphnia dubia (water flea) US EPA Method; Semi-static $CaCO_3$ = 16.4 mg/L, pH = 5.7

Chronic Toxicity
NOEC = 19.5 µg Pb/L

Experimental
Daphnia magna (water flea) $CaCO_3$ = 30 mg/L

Persistence and degradability
No data available.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Results of PBT and vPvB assessment
No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

Other Information: NICNAS: Water soluble lead(2+) salts: Environment tier II assessment

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SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1616
Class: 6.1
Packing Group: III
Proper Shipping Name: LEAD ACETATE

Environmental Hazards: Formation of health-hazardous mixtures possible with water. Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment. Hazard for drinking water.

Hazchem emergency action code (EAC)

2Z

IMDG

UN Number: 1616
Class: 6.1
Packing Group: III
EMS Number:
Proper Shipping Name: LEAD ACETATE

IATA

UN Number: 1616
Class: 6.1
Packing Group: III
Proper Shipping Name: LEAD ACETATE

SECTION 15: Regulatory information

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

Australia SUSMP

Poison Schedule: S6

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airbourne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)