Safety Data Sheet LEAD (II) CHLORIDE

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SECTION 1: Identification

GHS Product identifier

Product name	LEAD (II) CHLORIDE

Recommended use of the chemical and restrictions on use

Preparation of lead salts, lead chromate pigments, analytical reagent 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
- Carcinogenicity, Cat. 2
- Germ cell mutagenicity, Cat. 2
- Specific target organ toxicity following repeated exposure, Cat. 1
- Toxic to reproduction, Cat. 1
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1

GHS label elements, including precautionary statements

Pictograms

Signal word **Danger**

Hazard statement(s)

H302	Harmful if swallowed
H332	Harmful if inhaled
H341	Suspected of causing genetic defects
H351	Suspected of causing cancer
H360	May damage fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
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

Mixtures

Molecular weight: 278.1

Components

Component	CAS no.	Concentration
Lead chloride (EC no.: 231-845-5)	**7758-95-4**	**100 % (weight)**
CLASSIFICATIONS: Hazardous to the aquatic environment, short-term (acute), Cat. 1; Acute toxicity, inhalation, Cat. 4; Acute toxicity, oral, Cat. 4; Carcinogenicity, Cat. 2; Germ cell mutagenicity, Cat. 2; Hazardous to the aquatic environment, long-term (chronic), Cat. 1; Specific target organ toxicity following repeated exposure, Cat. 1; Toxic to reproduction, Cat. 1. HAZARDS: H302 - Harmful if swallowed; H332 - Harmful if inhaled; H341 - Suspected of causing genetic defects [route]; H351 - Suspected of causing cancer [route]; H372 - Causes damage to organs [organs] through prolonged or repeated exposure [route]; H400 - Very toxic to aquatic life; H410 - Very toxic to aquatic life with long lasting effects.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice — Eye wash fountains and safety showers should be available for emergency use.

If inhaled	If inhaled, remove from contaminated area to fresh air immediately. If breathing is difficult, give oxygen. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. Immediately medical attention is required.
In case of skin contact	Wash off with soap and plenty of water. Get medical attention if symptoms occur.
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 immediate medical advice.
Personal protective equipment for first-aid responders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Most important symptoms/effects, acute and delayed
Lead compounds 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 a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Use extinguishing media most appropriate for the surrounding fire. No limitations to the type of extinguishing media.
Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Runoff may pollute waterways.

Specific hazards arising from the chemical
Hazards from Combustion Products: Toxic gases, fumes and vapours, including very toxic lead/lead oxide, hydrogen chloride gas, hydrochloric acid, basic chlorides and chloride fumes.

Specific hazards arising from the chemical: 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)

Environmental precautions
Do not discharge into drains, surface water or ground water. Do not discharge to subsoil/soil.

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.

Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

Precautions for safe handling
Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Minimize dust generation and accumulation. Keep locked up. 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. Contaminated clothing should be removed and washed before re-use. Wash hands and face thoroughly after working with material. Under no circumstances eat, drink or smoke while handling this material.

Conditions for safe storage, including any incompatibilities
Toxic materials should be stored in a separate safety storage cabinet or room. Store in tightly closed containers, in a cool, dry, ventilated area away from incompatible materials. Keep apart from oxidising agents. Store away from foodstuffs. 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 authorized persons.

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 7758-95-4 (EC: 231-845-5)
Lead chloride
AU/SWA (Australia): 0.15 mg/m3 TWA inhalation

Appropriate engineering controls
n industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods

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
Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Nitrile rubber gloves Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.

Body protection
Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Respiratory protection
Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or

planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	White to off-white, fine crystalline powder.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	501 °C.
Boiling point or initial boiling point and boiling range	950 °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. Interaction with calcium is explosive on warming.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	Solubility in Water: 10.8 g/L at 20°C Solubility in Organic Solvents: Soluble in ammonium salts and alkali hydroxide; slightly soluble in dilute hydrochloric acid and in ammonia; slowly soluble in glycerol; insoluble in alcohol.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	1 mmHg (547 °C).
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 5.85.
Relative vapor density	No data available.
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes
No data available.

Further safety characteristics (supplemental)
Other Information: Index of refraction: 2.199, 2.217, 2.260.
Bulk Density: approx. 2900 kg/m^3 (498 °C).
Upon heating in air, readily forms basic chlorides.

SECTION 10: Stability and reactivity

Reactivity
Stable under normal conditions of storage and handling.

Chemical stability
Stable under ordinary temperatures, pressures and conditions of use and storage.

Possibility of hazardous reactions
Reaction with calcium is explosive when heated slightly.

Conditions to avoid

Heat, flames and other ignition sources, dust generation and incompatible materials.

Incompatible materials
Alkali metals, alkaline earth metals (calcium + warming), strong oxidizing agents, acids.

Hazardous decomposition products
Toxic gases, fumes and vapours, including very toxic lead/lead oxide, hydrogen chloride gas, hydrochloric acid, basic chlorides and chloride fumes.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
Toxicology Information: NICNAS: Sparingly-soluble lead salts: Human health tier II assessment

Acute Toxicity - Oral: LD50 (rat): > 1947 mg/kg (CAS# 7758-95-4) (RTECS)

Ingestion: Harmful if swallowed. Causes irritation of the gastrointestinal system. May cause metallic taste, nausea, vomiting, diarrhoea, and colics after a latency period of several hours, in many instances followed by shock. 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. Excessive exposure to lead salts can affect blood forming organs, kidneys and nervous and digestive systems. The synthesis of haemoglobin is inhibited and results in anaemia. If left untreated, neuromuscular dysfunction, possible paralysis, and encephalopathy can result. Additional symptoms of overexposure include: joint and muscle pain, weakness of the extensor muscles (frequently the hand and wrist), headache, dizziness, abdominal pain, diarrhea, constipation, nausea, vomiting, blue line on the gums, insomnia, and metallic taste. High body levels produce increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death.

Inhalation: Harmful by inhalation. May cause respiratory tract irritation. May cause similar effects as for swallowing.

Skin corrosion/irritation
May cause skin irritation. May be harmful if absorbed through the skin.

Serious eye damage/irritation
May cause eye irritation, with inflammation.

Respiratory or skin sensitization
No data available.

Germ cell mutagenicity
Germ Cell Mutagenicity: Category 2

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
Specific target organ toxicity - Repeated Exposure Category 1

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 chloride, are similar following inhalation or ingestion. Long-term lead toxicity is commonly referred to as 'plumbism' 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.

Other Information: 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 chloride: guinea pig LDLo oral 1500mg/kg (1500mg/kg) "Merck Index; an Encyclopedia of Chemicals, Drugs, and Biologicals", 11th ed., Rahway, NJ 07065, Merck & Co., Inc. 1989Vol. 11, Pg. 852, 1989.
rat LD50 intraperitoneal > 1251mg/kg (1251mg/kg) EHP, Environmental Health Perspectives. Vol. 10, Pg. 95, 1975.
Link to PubMed
rat LD50 oral > 1947mg/kg (1947mg/kg) EHP, Environmental Health Perspectives. Vol. 10, Pg. 95, 1975.
Link to PubMed

SECTION 12: Ecological information

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

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.

Short Summary of Assessment of Environmental Impact: Hazardous to the Aquatic Environment - Acute Hazard: Category 1
Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1

Other adverse effects
Do not allow to enter waters, waste water, or soil!

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: 2291
Class: 6.1
Packing Group: III
Proper Shipping Name: LEAD COMPOUND, SOLUBLE, N.O.S. (CONTAINS LEAD CHLORIDE)

Environmental Hazards: 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: 2291
Class: 6.1
Packing Group: III
EMS Number:
Proper Shipping Name: LEAD COMPOUND, SOLUBLE, N.O.S. (CONTAINS LEAD CHLORIDE)

IATA
UN Number: 2291
Class: 6.1
Packing Group: III
Proper Shipping Name: LEAD COMPOUND, SOLUBLE, N.O.S. (CONTAINS LEAD CHLORIDE)

SECTION 15: Regulatory information

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

Australia SUSMP
Poison Schedule: S6

Australian Inventory of Chemical Substances (AICS)
Product name: LEAD (II) CHLORIDE

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.

Preparation information
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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)