

# MATERIAL SAFETY DATA SHEET

## SECTION 1 - IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Material Name:** Lead Nitrate.  
**Catalogue Number:** C151  
**Other Names:** Lead dinitrate, Lead (II) nitrate, AC-5394, AC-5394P, AC-5394T.  
**Recommended Use:** For laboratory use only.

**Supplier Name:** ProSciTech  
**Street Address:** 1/11 Carlton Street, Kirwan, Qld. 4817 Australia  
**Telephone Number:** (07) 4773 9444 - 8:30am – 5:00pm, Monday to Friday (excluding Public Holidays)  
**Emergency Contact:** (07) 4773 9444 - 8:30am – 5:00pm, Monday to Friday (excluding Public Holidays)

## SECTION 2 - HAZARDS IDENTIFICATION

**Hazard Classification:**  
 Hazardous according to criteria of Hazardous Substances Information System [HSIS Worksafe Australia].

**Hazardous and/or Dangerous Nature:**  
 HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

**Risk Phrases:**  
 R33 Danger of cumulative effects.  
 R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed  
 R50/53 Very toxic to aquatic organisms, may cause long-term effects in the aquatic environment.  
 R61 May cause harm to the unborn child.  
 R62 Possible risk of impaired fertility.

**Safety Phrases:**  
 S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
 S53 Avoid exposure-obtain special instructions before use.  
 S60 This material and its container must be disposed of as hazardous waste.  
 S61 Avoid release to the environment. Refer to special instructions/Material Safety Data Sheets.

*Refer to Section 15 for Poisons Schedule.*

## SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

**Pure Substance (Proportion 100%):**

**Chemical Identity:** Lead Nitrate.  
**Common Name(s):** Lead dinitrate, Lead (II) nitrate, AC-5394, AC-5394P, AC-5394T.  
**CAS Number:** 10099-74-8

## SECTION 4 - FIRST AID MEASURES

**Ingestion:** If victim is alert and not convulsing, rinse out mouth and give 1/2 to 1 glass of water to dilute. Induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing vomit, rinse mouth and administer more water. Immediately transport victim to an emergency facility. Never give anything by mouth to an unconscious or convulsing person.

**Inhalation:** Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Seek immediate attention.

**Eye Contact:** Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention.

**Skin Contact:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash contaminated clothing before reusing. Discard contaminated leather articles such as shoes and belt.

**First Aid Facilities:** Eyebath/eyewash, Safety shower & general washroom facilities.

**Medical Attention & Special Treatment:**

Not available.

**Additional Information:**

May be fatal by ingestion, inhalation or skin absorption. Neurotoxin. Acute lead exposure causes reversible kidney damage and anemia. May impair the reproductive systems of both men and women. Damage may also be caused to the unborn fetus. Lead is a cumulative poison and even exposures to small amounts can raise the body's content to toxic levels. Target organs: blood, central nervous system, liver, kidneys, gastrointestinal system, male and female reproductive system, peripheral nervous system, skeletal muscle, brain, thyroid, testis.

## SECTION 5 - FIRE FIGHTING MEASURES

### Suitable Extinguishing Media:

Use flooding quantities of water.

### Hazards from Combustion Products:

Powerful oxidizing agent may ignite oxidizing materials. Contributes to combustion of other materials. Container explosion may occur under fire conditions or when heated. Contact with other material may cause fire and/or explosion. When contaminated, it is very sensitive. Contact with other material may form shock, heat or friction sensitive mixtures. May react violently with shock, friction or if heated. Toxic gases are evolved on heating lead nitrate above 205°C.

### Precautions for Fire Fighters:

Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full face piece operated in a pressure demand or other positive pressure mode. Cool containing vessels with 3 flooding quantities of water until well after fire is out.

**Hazchem Code:** Not available.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

### Emergency Procedures:

Evacuate the area. Eliminate all sources of ignition. Ventilate Area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Wear disposable coveralls and discard them after use.

### Containment & Clean up:

Sweep up and place in container for disposal. Avoid raising dust. Use non-sparking tools. Wash spill site after material pick up is complete.

DO NOT empty into drains. DO NOT touch spilled material. Avoid contact with a combustible material (wood, paper, oil, clothing...). Spills of lead nitrate must be promptly removed.

## SECTION 7 - HANDLING & STORAGE

### Precautions for Safe Handling:

Do not add any other material to the container. Do not wash down the drain. Do not breathe dust. Keep away from direct sunlight or strong incandescent light. Keep container tightly closed and dry. Manipulate under an adequate fume hood. Avoid raising dust. Empty containers may contain a hazardous residue. Handle and open container with care. Minimize dust generation and exposure - use dust mask or appropriate protection. Take off immediately all contaminated clothing. Avoid contact with a combustible material (wood, paper, oil, clothing...). This product must be manipulated by qualified personnel. Do not get in eyes, on skin or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling. In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible). Since the product is unstable, avoid sudden shocks, like dropping or rolling. Do not drop, roll or skid container.

### Precautions for Safe Storage:

Do not store near flammable or organic substances. Keep at temperature not exceeding 30°C. Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials.

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**National Exposure Standards:** No exposure standard allocated.

**Biological Limit Values:** No biological standard allocated.

### Engineering Controls:

Use only in a chemical fume hood to keep airborne levels below recommended exposure limits. Do not use in unventilated spaces. Adequate ventilation and clean up must be maintained to minimize dust accumulation. Dust layers should not be permitted to accumulate.

### Personal Protective Equipment:

Splash goggles. Impervious gloves (rubber or plastic), apron, coveralls, and/or other resistant protective clothing. Prior to use, user should confirm impermeability. Sufficient to protect skin. Have available and use as appropriate, face shields, rubber suits, aprons, and boots. An OSHA/MSHA jointly approved respirator is advised in the absence of proper environmental controls. If more than TLV do not breathe vapor. Wear self-contained breathing apparatus. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

## SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance:</b>	White crystals.
<b>Odour:</b>	Odourless.
<b>pH:</b>	Not available.
<b>Vapour pressure (mm of Hg at °C):</b>	Not available.
<b>Vapour density:</b>	Not available.
<b>Boiling point/range (°C):</b>	Decomposes at 470°C.
<b>Freezing/melting point (°C):</b>	Not available.
<b>Solubility:</b>	Soluble in water.
<b>Specific gravity or density:</b>	4.53 (water = 1)
<b>Flash Point:</b>	Not available.
<b>Flammable (explosive) limits:</b>	Not available.
<b>Ignition temperature:</b>	Not available.
<b>Formula Weight:</b>	331.20

## SECTION 10 - STABILITY AND REACTIVITY

<b>Chemical stability:</b>	Stable under normal conditions of use.
<b>Conditions to avoid:</b>	High temperatures, sparks, open flames and all other sources of ignition, shock, friction, contamination and incompatible materials.
<b>Incompatible Materials:</b>	May react violently with reducing agents, organic materials, and flammable/combustible materials. Because of explosive reaction or explosive compound formation, lead nitrate must not be mixed with ammonium thiocyanate, potassium acetate, lead hypophosphate, metal powders (e.g., aluminum, iron, copper, copper alloys), carbon, boron phosphide, cyanides, esters, phospham, phosphorus, sodium cyanide, hypophosphite's, stannous chloride, thiocyanates, isothiocyanates, sulfur, easily oxidizing materials, citric acid, nitrates and phosphinates.
<b>Hazardous Decomposition Products:</b>	Toxic gases are evolved on heating lead nitrate above 205°C.
<b>Hazardous Reactions:</b>	Contact with other material may cause fire and/or explosion. Avoid contamination with reactive substances. Contact with other material may form shock, heat or friction sensitive mixtures. Hazardous polymerization will not occur.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### Exposure and Health Effects:

May be fatal by ingestion, inhalation or skin absorption. Neurotoxin. Acute lead exposure causes reversible kidney damage and anemia. May impair the reproductive systems of both men and women. Damage may also be caused to the unborn fetus. Lead is a cumulative poison and even exposures to small amounts can raise the body's content to toxic levels.

Target organs: blood, central nervous system, liver, kidneys, gastrointestinal system, male and female reproductive system, peripheral nervous system, skeletal muscle, brain, thyroid, testis.

Symptoms of chronic exposure are like those for ingestion. Lead is a cumulative poison and even exposure to small amounts can raise the body's content to toxic levels. Tiredness, loss of weight, insomnia, blue line on gums, gastrointestinal disorder (constipation and colic), muscle weakness, hypertension with bradycardia, polyneuropathy, nephropathy, anemia, nephritis, encephalopathy, eye, lung, central and peripheral nervous system, liver, kidney, blood, thyroid damage. Reproductive toxin, teratogen, embryotoxic, and carcinogen. Lead compounds may cause testicular damage, sterility, sperm abnormalities, menstrual disorders, adverse effects on general reproductive performance in human. Passes through the placental barrier (can cause birth defects, postnatal development injury, increased foetal lethality and delayed foetal development). Excreted in maternal milk in animal.

To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.

### Ingestion:

Highly toxic. Lead salts may cause fatigue, disturbance of sleep, abdominal pain, nausea, headache, anorexia, metallic taste in mouth, muscle and joint pain, dizziness, colic, paralysis, hypertension, thirst, vomiting, constipation, or diarrhea, muscle weakness, irritability, encephalopathy, parasthesia, convulsions, coma and death. Prolonged 4 overexposures can severely damage red blood cell formation, central and peripheral nervous system, lung, liver and kidney damage with oliguria, hematuria, albuminuria, hemaglobinuria. See chronic overexposure. Estimated lethal dose is 0.5g lead. Nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrate poisoning including methemoglobinemia with cyanosis, nausea, dizziness, increased heart rate and respiratory paralysis.

**Inhalation:**

Highly toxic! Local irritation of the bronchi and lungs can occur, in case of acute exposure, symptoms such as metallic taste, chest and abdominal pain, nausea, vomiting, central nervous system depression, numbness, aching muscles, weakness, dyspnea, and increased blood levels may follow. Prolonged exposure or repeated exposure can lead to lead poisoning and death (see ingestion).

**Eye Contact:**

Dust may cause irritation, redness and possible damage due to abrasiveness.

**Skin Contact:**

Contact over short periods of time may cause severe irritation or burns. Readily absorbed through the skin.

**Human/Animal data:** LD50: Acute: 74 mg/kg (Mouse).  
LC50: Acute: 93 mg/kg (Rat).

**Carcinogenic Category:** Group 2A: Probably carcinogenic to humans.

**Other Carcinogenic Information:** Not available.

<b>SECTION 12 – ECOLOGICAL INFORMATION</b>
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<b>Ecotoxicity:</b>	Harmful to aquatic life at low concentrations.
<b>Persistence and degradability:</b>	Not available.
<b>Mobility:</b>	Not available.
<b>Additional Information:</b>	Not available.

<b>SECTION 13 - DISPOSAL CONSIDERATIONS</b>
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**Disposal Methods:**

Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, state and federal regulations.

**Special Precautions/Additional Informational:**

DO NOT allow material to enter drains - harmful to aquatic life.

<b>SECTION 14 - TRANSPORT INFORMATION</b>
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<b>UN Number:</b>	UN1469
<b>UN Proper Shipping Name:</b>	Lead Nitrate
<b>Class and Subsidiary risk:</b>	5.1/6.1
<b>Packing Group:</b>	PG II
<b>Special Precautions for User:</b>	Refer to Comments in Section 16.
<b>Hazchem Code:</b>	Not available.

<b>SECTION 15 - REGULATORY INFORMATION</b>
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**Poison Schedule Number:** S6

<b>SECTION 16 - OTHER INFORMATION</b>
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**Date of preparation of MSDS:** July 11

**Comments:**

Powerful oxidizing agent; may ignite oxidizing materials. Highly toxic! Carcinogen! Mutagen! Reproductive toxin! Teratogen! Embryotoxic! Neurotoxin! Nephrotoxic! Severe Irritant! Possible risks of irreversible effects. Danger! Cumulative effects. Do not breathe dust. Avoid all contact with the product. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Keep away from heat, sparks and flame. Avoid shock and friction. When contaminated, it is very sensitive. Contact with other material may cause fire and/or explosion. Risk of explosion by shock, friction, fire or other sources of ignition. Handle and open container with care. Container should be opened only by a technically qualified person. Harmful to aquatic life at low concentrations. Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.

**List of Publications referenced when creating this MSDS;**

- Hazardous Substances Information System Consolidated Lists: Safe Work Australia.
- APPROVED CRITERIA FOR CLASSIFYING HAZARDOUS SUBSTANCES [NOHSC:1008(2004)] 3rd Edition: National Occupational Health and Safety Commission.
- Dangerous Goods - Initial Emergency Response Guide (SAA/SNZ HB76:1997).
- IATA Dangerous Goods Regulations.
- Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)].

- Australia Standard for the Uniform Scheduling of Drugs and Poisons [SUSPD] (Australian Government Department of Health and Ageing).

*This Material Safety Data Sheet (MSDS) has been prepared in compliance with the National code of Practice for the Preparation of Material Safety Data Sheets 2<sup>nd</sup> Edition [NOHSC:2011(2003)]. It is the user's responsibility to determine the suitability of this information for adoption of necessary safety precautions. The information published in this MSDS has been compiled from the publications listed in Section 16: to the best of our ability and knowledge these publications are considered accurate. We reserve the right to revise Material Safety Data Sheets as new information becomes available. Copies may be made for non-profit use.*

***... End of MSDS ...***