

Safety Data Sheet SODIUM NITRATE

SDS no. JMRSQCLY • Version 1.0 • Date of issue: 2024-08-12

SECTION 1: Identification

GHS Product identifier

Product name SODIUM NITRATE

Other means of identification

Product Product Number

SODIUM NITRATE LR SL098

SODIUM NITRATE AR SA098

Nitrate of soda, Sodium saltpeter

Recommended use of the chemical and restrictions on use

Oxidising agent; solid rocket propellants; fertilizer; flux; glass manufacture; pyrotechnics; clinical reagent (parasites); refrigerant; matches; dynamites; black powders; manufacturing sodium salts and nitrates; manufacture of nitric acid; dyes; pharmaceuticals; aphrodisiac; colour fixative and preservative in cured meats, fish, etc.; enamel for pottery; modifying burning properties of tobacco 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

Dangerous goods of Class 5.1 (Oxidizing Agent) are incompatible in a placard load with any of the following:
Class 1, Class 2.1, Class 2.3, Class 3, Class 4, Class 5.2, Class 7, Class 8, Fire risk substances and Combustible liquids.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Serious eye damage/eye irritation, Cat. 2A
- Oxidizing solids, Cat. 3

GHS label elements, including precautionary statements

Pictograms



Signal word

Warning

Hazard statement(s)

H272
H319

May intensify fire; oxidizer
Causes serious eye irritation

Precautionary statement(s)

P210

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
No smoking.

P220

Keep away from clothing and other combustible materials.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313

If eye irritation persists: Get medical advice/attention.

P370+P378

In case of fire: Use agents recommended in Section 5 of SDS for extinction

P501

Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 84.99

Components

Component	CAS no.	Concentration
Sodium nitrate (EC no.: 231-554-3)	7631-99-4	100 % (weight)

CLASSIFICATIONS: Serious eye damage/eye irritation, Cat. 2A; Oxidizing solids, Cat. 3. HAZARDS: H272 - May intensify fire; oxidizer.

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor (at once).

If inhaled

If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

In case of skin contact

Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.

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.

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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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

Small fire: USE FLOODING QUANTITIES OF WATER. DO NOT use dry chemical, CO2 or foam.

If safe to do so, move undamaged containers from the fire area. DO NOT move cargo if cargo has been exposed to heat.

Large fire: Flood fire area with water from a protected position.

Cool containers with flooding quantities of water until well after the fire is out. If impossible, withdraw from area and let it burn. Avoid getting water inside the containers; a violent reaction may occur. Dam fire control water for later disposal.

Specific hazards arising from the chemical

Hazards from Combustion Products: May liberate toxic fumes in fire (sodium and nitrogen oxides).

Will accelerate burning when involved in a fire. May explode on heating, shock, friction or contamination. Some will react explosively with hydrocarbons (fuels). May ignite combustibles (wood, paper, clothing, etc). Fire may produce irritating, poisonous, and/or corrosive gases. Containers may explode on heating. Runoff may create fire or explosion hazard.

Special protective actions for fire-fighters

Wear SCBA and chemical splash suit. Structural firefighter's uniform will provide limited protection.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing. Avoid substance contact. Avoid generation of dusts: do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

Do not contaminate. Keep combustibles (wood, paper, clothing, oil, etc.) away from the spilled material. Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing. Use water spray to knock down vapours or divert vapour clouds. Prevent entry into waterways, drains or confined areas. Prevent exposure to heat.

Dry Spill: Use clean non-sparking tools to transfer material to a clean, dry plastic container and cover loosely. Move container from spill area.

Small Liquid Spill: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place in a loosely-covered container for later disposal.

Large Liquid Spill:

SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling

Avoid generation or accumulation of dusts. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. Wash hands and face thoroughly after working with material.

Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

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Store in a cool, dry place. Store in well ventilated area. Store away from combustible materials. Store away from acids. Keep containers securely sealed and protected against physical damage. Keep away from heat and other sources of ignition. This product should not be stored on wooden floors.

Empty containers may be hazardous.

Not corrosive in presence of glass.

SECTION 8: Exposure controls/personal protection

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

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.

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 granules or powder, or colourless, transparent crystals.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	308 °C
Boiling point or initial boiling point and boiling range	380 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	Explodes @ 537 °C
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	pH 5.5 - 8.0 (5% solution).

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Kinematic viscosity
Solubility

No data available.
Solubility in Water: Soluble
Solubility in Organic Solvents:
Soluble in glycerol. Slightly soluble in alcohol, acetone,
glycerol, ammonnia liquid.

Partition coefficient n-octanol/water (log value)
Vapor pressure
Evaporation rate
Density and/or relative density
Relative vapor density
Particle characteristics

No data available.
No data available.
No data available.
Specific Gravity: 2.26
No data available.
No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Saline, slightly bitter taste.

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Reacts with acids librating toxic fumes of nitrogen dioxide. Contact with the following may cause an explosion: barium rhodanide, boron phosphide, cyanides, sodium thiosulfate, sodium hypophosphite, sulfur plus charcoal, powdered aluminium and aluminium oxide. Fibrous organic material such as jute, wood, cellulosic materials can be highly combustible by nitrate impregnation.

Hazardous Polymerization: Will not occur.

Conditions to avoid

Shock sensitive. Heat, flames, ignition sources and incompatibles.

Incompatible materials

Aluminium oxide, boron phosphide, combustible substances, carbon, cyanides, finely powdered metals, jute, organic materials, powder aluminium, sodium hypophosphite, sodium thiosulfate, Strong reducing agents, strong acids, sulfur plus charcoal, and wood,

Hazardous decomposition products

Oxides of nitrogen.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 3430 mg/kg (OECD Test Guideline 401)

Ingestion: May cause gastroenteritis and abdominal pains. Symptoms may include mucosal irritations, nausea, diarrhoea, vomiting, dizziness, fatiuge,, headaches, incorrodination, bloody diarrhea, convulsions, collapse and cyanosis due to the lack of oxygen in the blood (bluish-coloured skin). Small repeated oses may cause headache and mental impairment. Rare cases of nitrates being converted to the more toxic nitrates have been reported, mostly with infants.

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Inhalation: Inhalation of dust may cause irritation to the mucous membranes and the respiratory tract. Symptoms may include coughing and shortness of breath.

Skin corrosion/irritation

Irritating to skin. Symptoms include redness, itching and pain.

Serious eye damage/irritation

Irritating to eyes. Symptoms include redness, itching and pain.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: Small repeated doses may cause headache and mental impairment. Under some circumstances methemoglobinemia occurs in individuals when the nitrate is converted by bacteria in the stomach to nitrite. Nausea, vomiting, dizziness, rapid heart beat, irregular breathing, convulsions, coma and death can occur should this conversion take place. After absorption of large quantities: methemoglobinemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms, key symptom: cyanosis (blue colouration of the blood).

Sodium nitrate: child LDLo oral 22500ug/kg (22.5mg/kg) BLOOD: METHEMOGLOBINEMIA-CARBOXYHEMOGLOBIN Journal of Toxicology, Clinical Toxicology. Vol. 32, Pg. 173, 1994.

[Link to PubMed](#)

mouse LD50 intravenous 175mg/kg (175mg/kg) Archiv fuer Toxikologie. Vol. 21, Pg. 89, 1965.

rabbit LD50 oral 2680mg/kg (2680mg/kg) Southwestern Veterinarian. Vol. 27, Pg. 246, 1974.

rat LD intraperitoneal > 181mg/kg (181mg/kg) Toxicology and Applied Pharmacology. Vol. 5, Pg. 750, 1963.

rat LD50 oral 1267mg/kg (1267mg/kg) Gigiena i Sanitariya. For English translation, see HYSAAV. Vol. 46(12), Pg. 66, 1981.

women TDLo oral 14mg/kg (14mg/kg) CARDIAC: PULSE RATE INCREASE WITHOUT FALL IN BP

LUNGS, THORAX, OR RESPIRATION: CYANOSIS

BLOOD: METHEMOGLOBINEMIA-CARBOXYHEMOGLOBIN Journal of Toxicology, Clinical Toxicology. Vol. 32, Pg. 173, 1994.

[Link to PubMed](#)

SECTION 12: Ecological information

Toxicity

This chemical has no biological oxygen demand, and it will not cause oxygen depletion in aquatic systems.
This chemical is not likely to bioconcentrate.

Mobility in soil

Likely to be mobile due to its solubility.

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: 1498
Class: 5.1
Packing Group: III
Proper Shipping Name: SODIUM NITRATE

Hazchem emergency action code (EAC)

1[Z]

IMDG

UN Number: 1498
Class: 5.1
Packing Group: III
EMS Number:
Proper Shipping Name: SODIUM NITRATE

IATA

UN Number: 1498
Class: 5.1
Packing Group: III
Proper Shipping Name: SODIUM NITRATE

SECTION 15: Regulatory information

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

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

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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 for 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 Airborne 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)