

# Safety Data Sheet



## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** **SODIUM NITRATE**

**Other name(s):** Nitrate of soda; Chilean saltpetre; Soda niter; Nitric acid, sodium salt; Nitrato de sodio

**Recommended Use of the Chemical and Restrictions on Use** Catalyst, fertilizer, fluxing agent, oxidant, preservative, propellant.

**Supplier:** Ixom Operations Pty Ltd  
**ABN:** 51 600 546 512  
**Street Address:** Level 8, 1 Nicholson Street  
East Melbourne Victoria 3002  
Australia

**Telephone Number:** +61 3 9906 3000  
**Emergency Telephone:** **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## 2. HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### Classification of the chemical:

Oxidising solids - Category 3  
Acute Oral Toxicity - Category 4  
Eye Irritation - Category 2A

**SIGNAL WORD:** WARNING



### Hazard Statement(s):

H272 May intensify fire; oxidizer.  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.

### Precautionary Statement(s):

#### Prevention:

P102 Keep out of reach of children.  
P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking.  
P220 Keep and store away from clothing, incompatible materials, combustible materials.  
P221 Take any precaution to avoid mixing with combustibles / incompatible materials.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves / protective clothing / eye protection / face protection.

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**Response:**

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330 Rinse mouth.

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 extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

**Storage:**

No storage statements.

**Disposal:**

P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

**Poisons Schedule (SUSMP):** None allocated.

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

**Product Description:** Contains anticaking agent.

Components	CAS Number	Proportion	Hazard Codes
Sodium nitrate	7631-99-4	>=99%	H272 H302 H319

## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

**Inhalation:**

Remove victim from area of exposure - avoid becoming a casualty. Seek medical advice if effects persist.

**Skin Contact:**

If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice.

**Eye Contact:**

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes.

**Ingestion:**

Rinse mouth with water. If swallowed, give a glass of water to drink. If vomiting occurs give further water. Seek immediate medical assistance.

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## Indication of immediate medical attention and special treatment needed:

Clinical findings: The smooth muscle relaxant effect of nitrate salts may lead to headache, dizziness and marked hypotension.

Cyanosis is clinically detectable when approximately 15% of the haemoglobin has been converted to methaemoglobin (ie. ferric iron).

Symptoms such as headache, dizziness, weakness and dyspnoea occur when methaemoglobin concentrations are 30% to 40%; at levels of about 60%, stupor, convulsions, coma and respiratory paralysis occur and the blood is a chocolate brown colour. At higher levels death may result. Spectrophotometric analysis can determine the presence and concentration of methaemoglobin in blood.

Treatment:

1. Give 100% oxygen.
2. In cases of (a) ingestion: use gastric lavage, (b) contamination of skin (unburnt or burnt): continue washing to remove salts.
3. Observe blood pressure and treat hypotension if necessary.
4. When methaemoglobin concentrations exceed 40% or when symptoms are present, give methylene blue 1 to 2 mg/kg body weight in a 1% solution by slow intravenous injection. If cyanosis has not resolved within one hour a second dose of 2 mg/kg body weight may be given. The total dose should not exceed 7 mg/kg body weight as unwanted effects such as dyspnoea, chest pain, vomiting, diarrhoea, mental confusion and cyanosis may occur. Without treatment methaemoglobin levels of 20-30% revert to normal within 3 days.
5. Bed rest is required for methaemoglobin levels in excess of 40%.
6. Continue to monitor and give oxygen for at least two hours after treatment with methylene blue.
7. Consider transfer to centre where haemoperfusion can be performed to remove the nitrates from the blood if the condition of the patient is unstable.
8. Following inhalation of oxides of nitrogen the patient should be observed in hospital for 24 hours for delayed onset of pulmonary oedema.

Further observation for 2-3 weeks may be required to detect the onset of the inflammatory changes of bronchiolitis fibrosa obliterans.

Treat with toluonium chloride to reverse methaemoglobinanaemia. After inhalation of decomposition products: Pulmonary oedema prophylaxis.

## 5. FIRE FIGHTING MEASURES

### Suitable Extinguishing Media:

Water spray (large quantities).

### Unsuitable Extinguishing Media:

ABC powder. Carbon dioxide.

**Hazchem or Emergency Action Code:** 1Z

### Specific hazards arising from the chemical:

Oxidizing substance.

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## Special protective equipment and precautions for fire-fighters:

Nitrate salts on their own are not combustible, however, they will support the combustion of other materials. Decomposes on heating emitting irritating white fumes and/or brown fumes. Brown fumes indicate the presence of toxic oxides of nitrogen.

On detection of fire the compartment(s) should be opened up to provide maximum ventilation. Fire-fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to products of combustion/decomposition. Fires should be fought from a protected location. Keep containers and adjacent areas cool with water spray. If safe to do so, remove containers from path of fire. If safe to do so, prevent molten material from being confined in drains, pipes etc.

A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion.

## 6. ACCIDENTAL RELEASE MEASURES

### Emergency procedures/Environmental precautions:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

### Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Wear protective equipment to prevent skin and eye contact. Avoid breathing in dust. Work up wind or increase ventilation. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers, bags or drums for disposal or re-use.

## 7. HANDLING AND STORAGE

### Precautions for safe handling:

Avoid skin and eye contact and breathing in dust. Keep out of reach of children.

### Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well ventilated place. Protect from moisture. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for spills.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control Parameters:** No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for particulates:

Dusts not otherwise classified: 8hr TWA = 10 mg/m<sup>3</sup>

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

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## Appropriate engineering controls:

Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

## Individual protection measures, such as Personal Protective Equipment (PPE):

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.



Wear overalls, chemical goggles and impervious gloves. Avoid generating and inhaling dusts. If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Crystalline Powder
<b>Colour:</b>	White
<b>Odour:</b>	Faint
<b>Molecular Formula:</b>	NaNO <sub>3</sub>
<b>Solubility:</b>	Soluble in water.
<b>Specific Gravity:</b>	2.26 @20°C
<b>Relative Vapour Density (air=1):</b>	Not available
<b>Vapour Pressure (20 °C):</b>	Not available
<b>Flash Point (°C):</b>	Not applicable
<b>Flammability Limits (%):</b>	Not applicable
<b>Autoignition Temperature (°C):</b>	Not applicable
<b>Solubility in water (g/L):</b>	874 @ 20°C
<b>Melting Point/Range (°C):</b>	306
<b>Decomposition Point (°C):</b>	>600
<b>pH:</b>	8-9 (100 g/L, 20°C)

## 10. STABILITY AND REACTIVITY

**Reactivity:** Reacts with oxidising agents. Reacts with reducing agents. Hygroscopic: absorbs moisture or water from surrounding air.

**Chemical stability:** Sodium nitrate is a powerful oxidising agent. Organic materials may become highly combustible when contaminated with sodium nitrate.

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<b>Possibility of hazardous reactions:</b>	Reacts with oxidising agents , reducing agents .
<b>Conditions to avoid:</b>	Avoid dust generation. Avoid exposure to heat. Avoid exposure to moisture.
<b>Incompatible materials:</b>	Incompatible with oxidising agents , reducing agents , ammonium compounds .
<b>Hazardous decomposition products:</b>	Oxides of nitrogen. Disodium oxide. Oxygen, which will support combustion.

## 11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

<b>Ingestion:</b>	Swallowing can result in nausea, vomiting, diarrhoea, and abdominal pain. Swallowing large amounts may result in headaches, dizziness and a reduction in blood pressure (hypotension).
<b>Eye contact:</b>	An eye irritant.
<b>Skin contact:</b>	Repeated or prolonged skin contact may lead to irritation.
<b>Inhalation:</b>	Breathing in dust may result in respiratory irritation.
<b>Acute toxicity:</b> Oral LD50 (rat): 1267 mg/kg	
<b>Skin corrosion/irritation:</b>	Non-irritant (rabbit).
<b>Serious eye damage/irritation:</b>	Irritant.
<b>Respiratory or skin sensitisation:</b>	Not a skin sensitiser (mouse).

**Chronic effects:** No carcinogenic effects were observed in animal studies. Under certain circumstances nitrosamines can form in contact with nitrosating agents. Some nitrosamines were found to cause cancer in animal experiments.

**Reproductive toxicity:** No evidence of reproductive effects.

**NITRATES:** Ingestion of large quantities will cause methaemoglobinemia with headaches, heart beat irregularities, blood pressure loss, cramps and breathing difficulties. Cyanosis will occur. Nephritis can result from chronic exposure. There is a risk of damage to the blood (methomoglobinemia) after a single uptake of large quantities.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Avoid contaminating waterways.
<b>Persistence/degradability:</b>	Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.
96hr LC50 (fish):	7950 mg/L (Oncorhynchus tshawytscha; static)

## 13. DISPOSAL CONSIDERATIONS

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## Disposal methods:

Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Material can be recycled.

## 14. TRANSPORT INFORMATION

### Road and Rail Transport

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.



**UN No:** 1498  
**Transport Hazard Class:** 5.1 Oxidizing Agent  
**Packing Group:** III  
**Proper Shipping Name or Technical Name:** SODIUM NITRATE  
**Hazchem or Emergency Action Code:** 1Z

### Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

**UN No:** 1498  
**Transport Hazard Class:** 5.1 Oxidizing Agent  
**Packing Group:** III  
**Proper Shipping Name or Technical Name:** SODIUM NITRATE

**IMDG EMS Fire:** F-A  
**IMDG EMS Spill:** S-Q

### Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

**UN No:** 1498  
**Transport Hazard Class:** 5.1 Oxidizing Agent  
**Packing Group:** III  
**Proper Shipping Name or Technical Name:** SODIUM NITRATE

## 15. REGULATORY INFORMATION

### Classification:

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

### Classification of the chemical:

Oxidising solids - Category 3  
Acute Oral Toxicity - Category 4  
Eye Irritation - Category 2A

Product Name: SODIUM NITRATE  
Substance No: 000031030401

Issued: 19/09/2016  
Version: 5

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**Hazard Statement(s):**

H272 May intensify fire; oxidizer.  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.

**Poisons Schedule (SUSMP):** None allocated.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

## 16. OTHER INFORMATION

Supplier Safety Data Sheet; 09/ 2016.

This safety data sheet has been prepared by Ixom Operations Pty Ltd Toxicology & SDS Services.

**Reason(s) for Issue:**

Revised Primary SDS  
Change in Hazardous Chemical Classification  
Change in Personal Protection Requirements

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.