



# SAFETY DATA SHEET SODIUM NITRATE SOLUTION REVISION 4, DATE 20 AUG 19

## 1. IDENTIFICATION

<b>Product Name</b>	<b>Sodium Nitrate Solution</b>
<b>Other Names</b>	Nitrate of Soda, 25% w/w solution; Nitrate of Soda, 50% w/v solution
<b>Uses</b>	Chemical intermediate/additive; Laboratory applications/reagent; Manufacture of substances.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	Unspecified
<b>Chemical Name</b>	Sodium nitrate, aqueous solution
<b>Product Description</b>	No Data Available

### Contact Details of the Supplier of this Safety Data Sheet

<b>Organisation</b>	<b>Location</b>	<b>Telephone</b>
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

### Emergency Contact Details

*For emergencies only; DO NOT contact these companies for general product advice.*

<b>Organisation</b>	<b>Location</b>	<b>Telephone</b>
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

## 2. HAZARD IDENTIFICATION

**Poisons Schedule (Aust)**

Not Scheduled



## Globally Harmonised System

**Hazard Classification** Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

**Hazard Categories** Oxidising Liquids - Category 3  
Acute Toxicity (Oral) - Category 5  
Serious Eye Damage/Irritation - Category 2A

**Pictograms**

**Signal Word** Warning

**Hazard Statements**

<b>H272</b>	May intensify fire; oxidizer.
<b>H303</b>	May be harmful if swallowed.
<b>H319</b>	Causes serious eye irritation.

<b>Precautionary Statements</b>	Prevention	<b>P210</b>	Keep away from heat.
		<b>P221</b>	Take any precaution to avoid mixing with combustibles.
		<b>P280</b>	Wear protective gloves/eye protection/face protection.
	Response	<b>P370 + P378</b>	In case of fire: Use water for extinction.
		<b>P337 + P313</b>	If eye irritation persists: Get medical advice/attention.
		<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Disposal	<b>P501</b>	Dispose of contents/container in accordance with local / regional / national / international regulations.	

**National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

**Dangerous Goods Classification** Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

<b>HSNO Classifications</b>	Physical Hazards	<b>5.1.1C</b>	Oxidising substances that are liquids or solids: low hazard
	Health Hazards	<b>6.1E</b>	Substances that are acutely toxic –May be harmful, Aspiration hazard
		<b>6.4A</b>	Substances that are irritating to the eye

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Ingredients**

Chemical Entity	Formula	CAS Number	Proportion
Sodium nitrate	Unspecified	7631-99-4	25 - 50 %

Water	H2O	7732-18-5	Balance %
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#### 4. FIRST AID MEASURES

##### *Description of necessary measures according to routes of exposure*

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth. Do not induce vomiting. Call a Poison Centre or doctor/physician for advice. Never give anything by mouth to an unconscious person.
<b>Eye</b>	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
<b>Skin</b>	IF ON SKIN: Remove and isolate contaminated clothing and shoes. Immediately flush skin with running water for at least 15 minutes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse. *Contaminated clothing may be a fire risk when dry.
<b>Inhaled</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
<b>Advice to Doctor</b>	Treat symptomatically. Keep victim calm and warm. Ensure that attending medical personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves. *Absorption of nitrates by ingestion, inhalation or through burnt or broken skin may cause dilation of the blood vessels by direct smooth muscle relaxation with a subsequent lowering of blood pressure and may also cause breathing difficulties, blueness of the skin (cyanosis) and methaemoglobinaemia. Following inhalation of oxides of nitrogen the patient should be observed in hospital for 24 hours for delayed onset of pulmonary oedema.
<b>Medical Conditions Aggravated by Exposure</b>	No information available.

#### 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	Move containers from fire area if you can do it without risk. Do not move cargo or vehicle if cargo has been exposed to heat. Cool containers with flooding quantities of water until well after fire is out. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.
<b>Flammability Conditions</b>	OXIDISING SUBSTANCE: Will accelerate burning when involved in a fire.
<b>Extinguishing Media</b>	If material is involved in a fire, use water for extinction. Do not use dry chemicals or foams. CO2 or Halon® may provide limited control. *Large fire: Flood fire area with water from a distance.
<b>Fire and Explosion Hazard</b>	Risk of violent reaction or explosion! May explode from heat or contamination. May ignite combustibles. Containers may explode when heated. Runoff may create fire or explosion hazard.
<b>Hazardous Products of Combustion</b>	Fire or heat may produce irritating and/or toxic gases, including oxides of nitrogen.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
<b>Personal Protective Equipment</b>	Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing (it may provide little or no thermal protection). Structural firefighters' protective clothing will only provide limited protection.
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	2Y

**6. ACCIDENTAL RELEASE MEASURES**

<b>General Response Procedure</b>	Ensure adequate ventilation - Ventilate closed spaces before entering. Prevent exposure to heat. ELIMINATE all ignition sources. Do not contaminate - Keep combustibles away from spilled material. Avoid breathing vapours and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal (see SECTION 13).
<b>Containment</b>	Stop leak if you can do it without risk. Prevent entry into waterways, drains or confined areas. Dike far ahead of liquid spill for later disposal.
<b>Decontamination</b>	Following product recovery, flush area with water.
<b>Environmental Precautionary Measures</b>	Spillages and decontamination runoff should be prevented from entering drains and watercourses. Local authorities should be advised if significant spillages cannot be contained.
<b>Evacuation Criteria</b>	Immediately isolate spill or leak area. Keep unauthorized personnel away. Stay upwind and/or uphill.
<b>Personal Precautionary Measures</b>	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8).

**7. HANDLING AND STORAGE**

<b>Handling</b>	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Before use, carefully read the product label. Avoid breathing mist/vapours and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). OXIDISING SUBSTANCE: Do not contaminate. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from foodstuffs, clothing and other incompatible materials (see SECTION 10). Ensure that all local regulations regarding handling and storage facilities are followed.
<b>Container</b>	Keep in the original container.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>General</b>	No exposure standards have been established for this product.
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	No information available.
<b>Engineering Measures</b>	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
<b>Personal Protection Equipment</b>	<ul style="list-style-type: none"> <li>- Respiratory protection: Not required under normal conditions of use. If engineering controls do not maintain airborne concentrations below recommended exposure limits or to an acceptable level, an approved respirator must be worn. Recommended: Air-purifying respirator with an appropriate, government approved, filter, cartridge or canister (refer to AS/NZS 1715 &amp; 1716).</li> <li>- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Wear splash-proof goggles.</li> <li>- Hand protection: Wear protective gloves. Recommended: Wear appropriate chemical resistant gloves, e.g. PVC or rubber gloves.</li> <li>- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Wear appropriate chemical resistant clothing. When using large quantities or where heavy contamination is likely, wear coveralls.</li> </ul>
<b>Special Hazards Precautions</b>	No information available.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated footwear that cannot be cleaned.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Liquid
<b>Appearance</b>	Liquid
<b>Odour</b>	Odourless or slight odour
<b>Colour</b>	Colourless
<b>pH</b>	7 - 9 (25% w/w) - 8 - 9.5 (50% w/v)
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	No Data Available
<b>Melting Point</b>	No Data Available
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Miscible with water
<b>Specific Gravity</b>	1.17 - 1.19 (25% w/w)
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	1.280 - 1.320 g/ml (50% w/v)
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	Not applicable.
<b>Fast or Intensely Burning Characteristics</b>	Risk of violent reaction or explosion!
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	OXIDISING SUBSTANCE: Will accelerate burning when involved in a fire. May ignite combustibles.
<b>Reactions That Release Gases or Vapours</b>	Fire or heat may produce irritating and/or toxic gases, including oxides of nitrogen.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

**10. STABILITY AND REACTIVITY**

<b>General Information</b>	May intensify fire; oxidiser.
<b>Chemical Stability</b>	Stable under recommended conditions of storage.
<b>Conditions to Avoid</b>	Prevent exposure to heat. Do not contaminate. Keep away from clothing and other combustible materials.
<b>Materials to Avoid</b>	Incompatible/reactive with acids, metallic salts, amines, organics and reducing agents.
<b>Hazardous Decomposition Products</b>	Fire or heat may produce irritating and/or toxic gases, including oxides of nitrogen. *May form toxic N-nitrosamines (suspected carcinogens) when mixed with amines and acids.
<b>Hazardous Polymerisation</b>	Polymerisation will not occur.

**11. TOXICOLOGICAL INFORMATION**

<b>General Information</b>	<ul style="list-style-type: none"> <li>- Acute toxicity: May be harmful if swallowed. Ingestion of large quantities may result in nausea, vomiting, abdominal pain and diarrhoea. Significant overexposure could potentially result in methemoglobinemia and nitrite poisoning. Symptoms might include cyanosis, increased pulse rates, nausea, vomiting dizziness, headache, weakness, shortness of breath and stupor.</li> <li>- Skin corrosion/irritation: Contact may result in irritation, redness, rash and dermatitis.</li> <li>- Eye damage/irritation: Causes serious eye irritation. Contact may result in irritation, lacrimation, pain and redness.</li> <li>- Respiratory/skin sensitisation: Not classified as causing skin or respiratory sensitisation.</li> <li>- Germ cell mutagenicity: Not classified as a mutagen.</li> <li>- Carcinogenicity: Not classified as a carcinogen.</li> <li>- Reproductive toxicity: Not classified as a reproductive toxin.</li> <li>- STOT (single exposure): Over exposure may result in irritation of the nose and throat, coughing, weakness, loss of appetite, nausea, vomiting and headache. High level exposure may result in dizziness, drowsiness, breathing difficulties and methaemoglobinaemia with cyanosis (i.e. blue/grey skin colour).</li> <li>- STOT (repeated exposure): Not classified as causing organ damage from repeated exposure.</li> <li>- Aspiration toxicity: Not classified as an aspiration hazard.</li> </ul>
<b>Acute</b>	
<b>Ingestion</b>	Acute toxicity (Oral): COMPONENT: Sodium nitrate (CAS No. 7631-99-4): - LD50, Rat: 1,267 mg/kg
<b>Carcinogen Category</b>	None

**12. ECOLOGICAL INFORMATION**

<b>Ecotoxicity</b>	No information available.
<b>Persistence/Degradability</b>	No information available.
<b>Mobility</b>	No information available.
<b>Environmental Fate</b>	Prevent product from entering drains and waterways.
<b>Bioaccumulation Potential</b>	No information available.
<b>Environmental Impact</b>	No Data Available

**13. DISPOSAL CONSIDERATIONS**

**General Information**

Dispose of contents/container in accordance with local/regional/national regulations. Dispose of material through a licensed waste contractor.

**Special Precautions for Land Fill**

No information available.

**14. TRANSPORT INFORMATION****Land Transport (Australia)**

ADG Code

<b>Proper Shipping Name</b>	OXIDIZING LIQUID, N.O.S. (Sodium Nitrate Solution)
<b>Class</b>	5.1 Oxidising Substances
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	31 Oxidizing Substances
<b>UN Number</b>	3139
<b>Hazchem</b>	2Y
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

**Land Transport (Malaysia)**

ADR Code

<b>Proper Shipping Name</b>	OXIDISING LIQUID, N.O.S. (Sodium Nitrate Solution)
<b>Class</b>	5.1 Oxidising Substances
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	31 Oxidizing Substances
<b>UN Number</b>	3139
<b>Hazchem</b>	2Y
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

**Land Transport (New Zealand)**

NZS5433

<b>Proper Shipping Name</b>	OXIDIZING LIQUID, N.O.S. (Sodium Nitrate Solution)
<b>Class</b>	5.1 Oxidising Substances
<b>Subsidiary Risk(s)</b>	No Data Available
<b>EPG</b>	31 Oxidizing Substances
<b>UN Number</b>	3139
<b>Hazchem</b>	2Y
<b>Pack Group</b>	III
<b>Special Provision</b>	No Data Available

**Land Transport (United States of America)**

US DOT

<b>Proper Shipping Name</b>	OXIDIZING LIQUID, N.O.S. (Sodium Nitrate Solution)
<b>Class</b>	5.1 Oxidising Substances
<b>Subsidiary Risk(s)</b>	No Data Available
<b>ERG</b>	140 Oxidizers

UN Number	3139
Hazchem	2Y
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	OXIDIZING LIQUID, N.O.S. (Sodium Nitrate Solution)
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	3139
Hazchem	2Y
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-Q
Marine Pollutant	No

Air Transport

IATA DGR

Proper Shipping Name	OXIDIZING LIQUID, N.O.S. (Sodium Nitrate Solution)
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	3139
Hazchem	2Y
Pack Group	III
Special Provision	No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification	Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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15. REGULATORY INFORMATION

General Information	No Data Available
Poisons Schedule (Aust)	Not Scheduled

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code	HSR002631
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National/Regional Inventories

Australia (AIIIC)	Listed
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Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

## 16. OTHER INFORMATION

Related Product Codes	NISODL1000, NISODL1001, NISODL1010, NISODL1020, NISODL2500
Revision	4
Revision Date	20 Aug 2019
Key/Legend	<p>&lt; Less Than &gt; Greater Than  <b>AICS</b> Australian Inventory of Chemical Substances  <b>atm</b> Atmosphere  <b>CAS</b> Chemical Abstracts Service (Registry Number)  <b>cm<sup>2</sup></b> Square Centimetres  <b>CO<sub>2</sub></b> Carbon Dioxide  <b>COD</b> Chemical Oxygen Demand  <b>deg C (°C)</b> Degrees Celcius  <b>EPA (New Zealand)</b> Environmental Protection Authority of New Zealand  <b>deg F (°F)</b> Degrees Fahrenheit  <b>g</b> Grams  <b>g/cm<sup>3</sup></b> Grams per Cubic Centimetre  <b>g/l</b> Grams per Litre  <b>HSNO</b> Hazardous Substance and New Organism  <b>IDLH</b> Immediately Dangerous to Life and Health  <b>immiscible</b> Liquids are insoluable in each other.  <b>inHg</b> Inch of Mercury  <b>inH<sub>2</sub>O</b> Inch of Water  <b>K</b> Kelvin  <b>kg</b> Kilogram  <b>kg/m<sup>3</sup></b> Kilograms per Cubic Metre  <b>lb</b> Pound  <b>LC50</b> LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.</p>

**LD50** LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

**ltr** or **L** Litre

**m<sup>3</sup>** Cubic Metre

**mbar** Millibar

**mg** Milligram

**mg/24H** Milligrams per 24 Hours

**mg/kg** Milligrams per Kilogram

**mg/m<sup>3</sup>** Milligrams per Cubic Metre

**Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

**mm** Millimetre

**mmH<sub>2</sub>O** Millimetres of Water

**mPa.s** Millipascals per Second

**N/A** Not Applicable

**NIOSH** National Institute for Occupational Safety and Health

**NOHSC** National Occupational Health and Safety Commission

**OECD** Organisation for Economic Co-operation and Development

**Oz** Ounce

**PEL** Permissible Exposure Limit

**Pa** Pascal

**ppb** Parts per Billion

**ppm** Parts per Million

**ppm/2h** Parts per Million per 2 Hours

**ppm/6h** Parts per Million per 6 Hours

**psi** Pounds per Square Inch

**R** Rankine

**RCP** Reciprocal Calculation Procedure

**STEL** Short Term Exposure Limit

**TLV** Threshold Limit Value

**tne** Tonne

**TWA** Time Weighted Average

**ug/24H** Micrograms per 24 Hours

**UN** United Nations

**wt** Weight