

1. IDENTIFICATION

Product Name	Potassium nitrate
Other Names	Niter; Nitrate of potash; Saltpeter
Uses	Chemical synthesis; Oxidiser in explosives; Food preservation, preparation; Fertiliser; Pharmacology.
Chemical Family	No Data Available
Chemical Formula	KNO ₃
Chemical Name	Nitric acid, potassium salt
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty 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.

Organisation	Location	Telephone
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766

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 Solids - Category 3



Pictograms



Signal Word

Warning

Hazard Statements

H272

May intensify fire; oxidizer.

Precautionary Statements

Prevention

P221

Take any precaution to avoid mixing with combustibles.

P210

Keep away from heat.

P280

Wear protective gloves/eye protection/face protection.

Response

P370 + P378

In case of fire: Use dry chemical, alcohol resistant foam or dry sand for extinction.

Disposal

P501

Dispose of contents/container in accordance with local / regional / national / international regulations.

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications

Physical Hazards

5.1.1C

Oxidising substances that are liquids or solids: low hazard

Health Hazards

6.1D

Substances that are acutely toxic - Harmful

6.3B

Substances that are mildly irritating to the skin

6.4A

Substances that are irritating to the eye

Environmental Hazards

9.3C

Substances that are harmful to terrestrial vertebrates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Potassium nitrate	KNO ₃	7757-79-1	>=99 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

IF SWALLOWED: Rinse mouth. Do not induce vomiting unless directed to do so by medical personnel. Call a Poison Centre or doctor/physician for advice. Never give anything by mouth to an unconscious person.

Eye

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.

Skin

IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes. In case of gross contamination, drench contaminated clothing and skin with plenty of water before removing clothes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.

Inhaled

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult. Keep victim calm and warm - Obtain immediate medical care.

Advice to Doctor

Treat symptomatically. Ensure that attending medical personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves. Rinse contaminated clothes (fire hazard) with plenty of water.

Medical Conditions Aggravated by Exposure

Prolonged exposure may cause anemia and methaemoglobinemia.



5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat. Cool containers with flooding quantities of water until well after fire is out – If impossible, withdraw from area and let fire burn. Avoid getting water inside containers - a violent reaction may occur. Dam fire control water for later disposal.
Flammability Conditions	OXIDISING SUBSTANCE: Non-combustible; however, will accelerate burning when involved in a fire.
Extinguishing Media	Use flooding quantities of water for extinction - Do NOT use dry chemicals, Carbon dioxide (CO ₂) or foam. Large fire: Flood fire area with water from a protected position.
Fire and Explosion Hazard	May explode from heating, shock, friction or contamination. May ignite combustibles. Containers may explode when heated. Runoff may create fire or explosion hazard.
Hazardous Products of Combustion	Fire may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides, Oxygen.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways and may create fire or explosion hazard.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit).
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	1Z

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. Prevent exposure to heat. Remove all sources of ignition. Do not contaminate - Keep combustibles (wood, paper, clothing, oil, etc) away from spilled material. Clean up spills immediately. Avoid generating dusty conditions. Avoid breathing dust and contact with eyes, skin and clothing.
Clean Up Procedures	Use clean, non-sparking tools to transfer material to a suitable, clean container for disposal (see SECTION 13). Move container from spill area.
Containment	Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
Decontamination	Wash away remainder with plenty of water.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses - Runoff may pollute waterways and may create fire or explosion hazard.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground.
Personal Precautionary Measures	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8). Do not contaminate - Take any precaution to avoid mixing with combustibles/incompatible materials.

7. HANDLING AND STORAGE

Handling	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. Avoid generating dusty conditions. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). OXIDISING SUBSTANCE: Keep away from heat and all sources of ignition - No smoking. Do not contaminate - Take any precaution to avoid mixing with combustibles/incompatible materials.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Keep away from heat and all sources of ignition - No smoking. Keep/store away from clothing and combustible materials. Keep away from incompatible materials (see SECTION 10). Avoid storage on wooden floors.
Container	Keep in the original container.



8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	No value assigned for this specific material by Safe Work Australia. For dusts from solid substances without specific occupational exposure standards: - Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m ³ , measured as inhalable dust. - New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m ³ (total); TWA = 3 mg/m ³ (respirable). Derived no-effect levels (DNELs) for Workers: - Dermal: Long-term, Systemic effects: 20.8 mg/kg bw/day. - Inhalation: Long-term, Systemic effects: 36.7 mg/m ³ .
Exposure Limits	No Data Available
Biological Limits	Predicted no-effect concentrations (PNECs): - Freshwater: 0.45 mg/l - Marine water: 0.045 mg/l - Intermittent release: 4.5 mg/l - STP: 18 mg/l
Engineering Measures	A system of local and /or general exhaust is recommended to keep employee exposures as low 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.
Personal Protection Equipment	- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or when dusts are generated. Recommended: Dust mask/respirator, Filter type: P1 (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Protective eyeglasses or chemical safety goggles. - Hand protection: Wear protective gloves. Recommended (full/splash contact): Impervious gloves, e.g. Nitrile rubber (0.11 mm), Break through time: >480 min. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.
Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Do not ingest. Avoid contact with eyes and prolonged or repeated contact with skin. Wash thoroughly after handling. Remove contaminated clothing and shoes immediately and rinse with plenty of water (fire hazard).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline powder, prill
Odour	Odourless
Colour	White
pH	4.5 - 8.5 (5 % soln.)
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	333 - 335 °C
Freezing Point	No Data Available
Solubility	Soluble in water
Specific Gravity	2.1
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	400 °C
Density	2.1 g/cm ³
Specific Heat	No Data Available
Molecular Weight	101.10 g/mol
Net Propellant Weight	No Data Available



Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	No information available.
Fast or Intensely Burning Characteristics	May explode from heating, shock, friction or contamination.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	OXIDISING SUBSTANCE: Non-combustible; however, will accelerate burning when involved in a fire.
Reactions That Release Gases or Vapours	Fire may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides, Oxygen.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	Reacts violently with organic materials, combustible materials and reducing agents.
Chemical Stability	Stable under normal temperatures and pressures.
Conditions to Avoid	Avoid dust formation. Keep away from heat and all sources of ignition. Do not contaminate.
Materials to Avoid	Incompatible/reactive with organic materials, combustible materials and reducing agents. Specific incompatibles under various conditions include aluminum, titanium, antimony, germanium, zinc, zirconium, calcium disilicide, chromium nitride, metal sulfides, boron, carbon, sulfur, phosphorus, phosphides, sodium phosphinate, sodium thiosulfate, citric acid, tin chloride, sodium acetate, and thorium carbide.
Hazardous Decomposition Products	Fire may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides, Oxygen.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Information on possible routes of exposure:</p> <ul style="list-style-type: none"> - Ingestion: May be harmful if swallowed; May cause abdominal pain, nausea, vomiting, diarrhoea. - Eye contact: Causes (slight) eye irritation. Not irritating (Rabbit) [OECD 405, 437]. - Skin contact: Causes mild skin irritation. Not irritating (Rabbit) [OECD 404]. - Inhalation: Dust may cause respiratory irritation, cough, sore throat. <p>Chronic effects: Ingestion of large quantities causes methaemoglobinemia with headaches, heart beat irregularities, blood pressure loss, cramps and breathing difficulties; cyanosis; nephritis.</p> <p>*Nitrate or nitrite (ingested) under conditions that result in endogenous nitrosation is classified in Group 2A of the IARC Monographs - Probably carcinogenic to humans.</p>
Acute	
Ingestion	<p>Acute toxicity (Oral):</p> <ul style="list-style-type: none"> - LD50, Rat: 3,540 - 3,750 mg/kg
Carcinogen Category	None



12. ECOLOGICAL INFORMATION

Ecotoxicity	Aquatic toxicity: - LC50, <i>Poecilia reticulata</i> (Guppy): 191 mg/l (96 h) [ECOTOX Database]. - EC50, <i>Daphnia magna</i> (Water flea): 490 mg/l (48 h) [IUCLID].
Persistence/Degradability	In aqueous solution, the substance is dissociated into potassium and nitrate ions. Under anoxic conditions, denitrification occurs and nitrate is ultimately converted into molecular nitrogen as part of the Nitrogen cycle.
Mobility	No information available.
Environmental Fate	Prevent entry into drains and waterways.
Bioaccumulation Potential	Low bioaccumulation potential.
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Generation of waste should be avoided or minimised wherever possible. Dispose of surplus, non-recyclable product and any by-products via a specialist disposal company and in accordance with local/regional/national regulations. Depending on the degree and nature of contamination, dispose of as fertiliser, as a raw material or in an authorised waste facility. Incineration or landfill should only be considered when recycling is not feasible.
Special Precautions for Land Fill	Contaminated packaging: Empty containers or liners may contain product residues. Handle uncleaned containers like the product itself. Packages should be emptied and can be recycled after thorough cleansing.

14. TRANSPORT INFORMATION**Land Transport (New Zealand)**

NZS5433

Proper Shipping Name	POTASSIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
EPG	31 Oxidizing Substances
UN Number	1486
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	POTASSIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	1486
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available
EMS	F-A, S-Q
Marine Pollutant	No



Air Transport

IATA DGR

Proper Shipping Name	POTASSIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
UN Number	1486
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available

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 HSR001338

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	231-818-8
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)	Listed



16. OTHER INFORMATION

Related Product Codes

PONITR0200, PONITR1000, PONITR1001, PONITR1002, PONITR1003, PONITR1004, PONITR1005, PONITR1006, PONITR1007, PONITR1008, PONITR1009, PONITR1010, PONITR1011, PONITR1012, PONITR1013, PONITR1014, PONITR1015, PONITR1017, PONITR1040, PONITR1045, PONITR1066, PONITR1100, PONITR1111, PONITR1112, PONITR1113, PONITR1115, PONITR1116, PONITR1117, PONITR1118, PONITR1119, PONITR1120, PONITR1121, PONITR1200, PONITR1205, PONITR1206, PONITR1207, PONITR1208, PONITR1215, PONITR1216, PONITR1217, PONITR1218, PONITR1219, PONITR1220, PONITR1221, PONITR1222, PONITR1223, PONITR1224, PONITR1225, PONITR1300, PONITR1400, PONITR1500, PONITR1600, PONITR1700, PONITR1799, PONITR1800, PONITR1801, PONITR1802, PONITR1803, PONITR1804, PONITR1805, PONITR1806, PONITR1807, PONITR1808, PONITR1809, PONITR1810, PONITR1811, PONITR1812, PONITR1813, PONITR1814, PONITR1815, PONITR1816, PONITR1817, PONITR1818, PONITR1819, PONITR1820, PONITR1821, PONITR1822, PONITR1823, PONITR1824, PONITR1825, PONITR1900, PONITR2000, PONITR2001, PONITR2002, PONITR2003, PONITR2004, PONITR2005, PONITR2006, PONITR2007, PONITR2200, PONITR2400, PONITR2600, PONITR2800, PONITR2801, PONITR2900, PONITR3000, PONITR3024, PONITR3200, PONITR3300, PONITR3500, PONITR3501, PONITR3502, PONITR3600, PONITR3601, PONITR4000, PONITR4001, PONITR4100, PONITR4200, PONITR4300, PONITR4400, PONITR4500, PONITR4600, PONITR4700, PONITR5000, PONITR5001, PONITR5200, PONITR5300, PONITR5500, PONITR5501, PONITR5600, PONITR5800, PONITR5900, PONITR6100, PONITR6101, PONITR6102, PONITR6200, PONITR6300, PONITR6400, PONITR6500, PONITR6600, PONITR6601, PONITR6700, PONITR6701, PONITR6702, PONITR6800, PONITR6801, PONITR6802, PONITR6803, PONITR6804, PONITR6805, PONITR6806, PONITR6810, PONITR6811, PONITR6900, PONITR6901, PONITR7000, PONITR7001, PONITR7002, PONITR7003, PONITR7004, PONITR7005, PONITR7006, PONITR7010, PONITR7011, PONITR7012, PONITR7100, PONITR7100, PONITR7200, PONITR7201, PONITR7202, PONITR7203, PONITR7204, PONITR7205, PONITR7206, PONITR7207, PONITR7208, PONITR7209, PONITR7210, PONITR7211, PONITR7212, PONITR7213, PONITR7214, PONITR7215, PONITR7216, PONITR7217, PONITR7300, PONITR7301, PONITR7302, PONITR7303, PONITR7304, PONITR7305, PONITR7306, PONITR7307, PONITR7308, PONITR7309, PONITR7310, PONITR7311, PONITR7400, PONITR7401, PONITR7500, PONITR7600, PONITR7700, PONITR7800, PONITR8000, PONITR8001, PONITR8200, PONITR8500, PONITR8501, PONITR8600, PONITR9000, PONITR9100, PONITR9101, PONITR9200, PONITR9201, PONITR9300, PONITR9500, PONITR9600, PONITR9700, PONITR9800

Revision

4

Revision Date

28 Sep 2018

Key/Legend

< Less Than

> Greater Than

AICS Australian Inventory of Chemical Substances**atm** Atmosphere**CAS** Chemical Abstracts Service (Registry Number)**cm²** Square Centimetres**CO₂** Carbon Dioxide**COD** Chemical Oxygen Demand**deg C (°C)** Degrees Celcius**EPA (New Zealand)** Environmental Protection Authority of New Zealand**deg F (°F)** Degrees Fahrenheit**g** Grams**g/cm³** Grams per Cubic Centimetre**g/l** Grams per Litre**HSNO** Hazardous Substance and New Organism**IDLH** Immediately Dangerous to Life and Health**immiscible** Liquids are insoluble in each other.**inHg** Inch of Mercury**inH₂O** Inch of Water**K** Kelvin**kg** Kilogram**kg/m³** Kilograms per Cubic Metre**lb** Pound**LC50** 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.**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**m³** Cubic Metre**mbar** Millibar**mg** Milligram**mg/24H** Milligrams per 24 Hours**mg/kg** Milligrams per Kilogram**mg/m³** Milligrams per Cubic Metre**Misc** or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.**mm** Millimetre**mmH₂O** 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

