

SAFETY DATA SHEET

PRODUCT NAME: POTASSIUM NITRATE

Issue Date: May 23

IDENTIFICATION

Product Name: Potassium Nitrate
Other Names: Niter; Nitrate of Potash; Saltpeter
Product Code: ZPNITR
Uses: Chemical synthesis; Oxidiser in explosives; Food preservation, preparation; Fertiliser; Pharmacology.
Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
Phone: 079744971 Web: www.hamchem.nz Email: info@hamchem.nz

- In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.
- In case of poisoning phone National Poisons Centre – 0800 764 766

HAZARD IDENTIFICATION



GHS Classifications

Oxidising Solid – Category 3
Acute Toxicity (Oral) – Category 4
Eye Irritation – Category 2

Signal Word: Warning

Hazard Statements

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

Prevention

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/clothing and eye/face protection
P264 Wash hands thoroughly after handling
P280 Do not eat, drink or smoke when using this product

Response

P370 + P378 In case of fire: Use dry chemical, alcohol resistant foam or dry sand to extinguish
P301 + P312 IF SWALLOWED: Call a POISON CENTRE or Doctor 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

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HamChem Ltd, 75 Ruffell Road, Hamilton, New Zealand. Phone: 07-974-4971 Email: info@hamchem.nz Web: www.hamchem.nz

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Disposal

P501 Dispose of contents/container to an approved waste facility in accordance with local regulations

COMPOSITION & INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportion (%)
Potassium Nitrate	7757-79-1	>=99%

FIRST AID MEASURES

National Poisons Centre – 0800 POISON (0800 764 766)

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.

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/shoes before reuse.

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.

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 so. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

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 methemoglobinemia.

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 (CO₂) 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 Decomposition: 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.

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Personal Protective Equipment: Wear self-contained breathing apparatus (SCBA) in combination with normal fire-fighting clothing (full fire kit).

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. 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 Exposure Controls & Personal Protection section of this SDS).

HANDLING & STORAGE

Handling: Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product dust/fumes. Do NOT allow product to come into contact with combustible materials, organics or other readily oxidizable materials. Avoid contact with eyes, skin and clothing.

Storage: Store in a cool, dry, well-ventilated area, out of direct sunlight. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials as listed in Stability & Reactivity section of this SDS. Protect from direct sunlight, moisture, food and feedstuffs. Avoid storage on wood floors.

Container: Keep in the original container.

EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure standards: No value assigned for this specific material by Worksafe New Zealand. For dusts from solid substances without specific occupational exposure standard: New Zealand WES (particulates not otherwise classified): TWA = 10mg/m³ (total); TWA = 3mg/m³ (respirable). Derived no-effect levels (DNELs) for workers: Dermal: Long term, Systemic effects: 20.8mg/kg bw/day. Inhalation: Long term, Systemic effects: 36.7 mg/m³

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: 18mg/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.

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Personal Protective 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 (0.11mm), Break through time: >480 minutes. Skin/Body Protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.

Special Hazard 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).

PHYSICAL & 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 Rate	400°C
Density	2.1 g/cm ³
Specific Heat	No data available
Molecular Weight	101.10 g/mol
Fast or Intensely Burning Characteristics	May explode from heating, shock, friction or contamination
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

STABILITY & 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 aluminium, titanium, antimony, germanium, zinc, zirconium, calcium disilicide, chromium nitride, metal sulfides, boron, carbon, sulfur, phosphorous,

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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: Hazardous polymerization will not occur.

TOXICOLOGICAL INFORMATION

General Information: Information on possible routes of exposure:

- Ingestion: May be harmful if swallowed; may cause abdominal pain, nausea, vomiting, diarrhea.
- 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.

Chronic Effects: Ingestion of large quantities causes methemoglobinemia with headaches, heart beat irregularities, blood pressure loss, cramps and breathing difficulties; cyanosis; nephritis.

Toxicity: LD50, Rat: 3,540 – 3,750 mg/kg

Carcinogen Category: None

ECOLOGICAL INFORMATION

Ecotoxicity: Aquatic Toxicity: LC50, *Poecilia reticulata* (Guppy): 191 mg/l (96h) [ECOTOX Database].
EC50, *Daphnia magna* (Water flea): 490 mg/l (48h) [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

DISPOSAL CONSIDERATIONS

General Information: Generation of waste should be avoided or minimized 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 fertilizer, as a raw material or in an authorized waste facility. Incineration or landfill should only be considered when recycling is not feasible.

Special Precautions for Landfill: 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.

PRODUCT NAME: POTASSIUM NITRATE

TRANSPORT INFORMATION

Proper Shipping name: POTASSIUM NITRATE
Dangerous Goods Class: 5.1 – Oxidising Substances
UN Number: 1486
Packing group: III
Hazchem Code: 1Z

REGULATORY INFORMATION

HSNO Classifications: 5.1.1C, 6.1D, 6.4A
HSNO Approval Code: HSR001338 – Nitric Acid, potassium salt

OTHER INFORMATION

End of SDS.