

#### 1. IDENTIFICATION

Product Name Zinc Nitrate

Other Names Nitric acid, zinc salt [CAS#7779-88-6]; Zinc dinitrate, hexahydrate

**Uses** General chemical; dyestuff manufacture; acidic catalyst; latex coagulant.

Chemical Family No Data Available
Chemical Formula Zn(NO3)2.6H2O

Chemical Name Nitric acid, zinc salt, hexahydrate

Product Description No Data Available

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

 Organisation
 Location
 Telephone

 Redox Ltd
 2 Swettenham Road
 +61-2-97333000

Minto NSW 2566 Australia

Redox Ltd 11 Mayo Road +64-9-2506222

Wiri Auckland 2104 New Zealand

Redox Inc. 3960 Paramount Boulevard +1-424-675-3200

Suite 107

Lakewood CA 90712

USA

Redox Chemicals Sdn Bhd Level 2, No. 8, Jalan Sapir 33/7 +60-3-5614-2111

Seksyen 33, Shah Alam Premier Industrial Park

40400 Shah Alam Sengalor, Malaysia

### **Emergency Contact Details**

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

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

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Redox Ltd
Corporate Office Sydney
Locked Bag 15 Minto NSW 2566 Australia
2 Swettenham Road Minto NSW 2566 Australia
All Deliveries: 4 Holmes Road Minto NSW 2566 Australia

Phone Fax E-mail Web ABN

+61 2 9733 3000 +61 2 9733 3111 sydney@redox.com www.redox.com 92 000 762 345 Australia Adelaide Brisbane Melbourne Perth Sydney New Zealand
Auckland
Christchurch
Hawke's Bay
UK

New Zealand
Kuala L
USA
Los An
Oakland
London
Mexico

Malaysia Kuala Lumpur USA Los Angeles Oakland

+1-703-527-3887



#### **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 2

Acute Toxicity (Oral) - Category 4 Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Irritation - Category 2A

Specific Target Organ Toxicity (Single Exposure) - Category 3 Acute Hazard To The Aquatic Environment - Category 1 Long-term Hazard To The Aquatic Environment - Category 2

**Pictograms** 







Signal Word Danger

Hazard Statements H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.H315 Causes skin irritation.

H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

**H411** Toxic to aquatic life with long lasting effects.

**Precautionary Statements** Prevention **P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

**P221** Take any precaution to avoid mixing with combustibles.

**P280** Wear protective gloves/protective clothing/eye protection/face protection.

**P261** Avoid breathing dusts or mists.

P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.

**P273** Avoid release to the environment.

Response P370 + P378 In case of fire: Use water for extinction.

**P337 + P313** If eye irritation persists: Get medical advice/attention.

P330 Rinse mouth.

P302 + P352

P312

**P332 + P313** If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,

if present and easy to do. Continue rinsing.

IF ON SKIN: Wash with plenty of water/...

P304 + P340 IF INHALED: Remove victim to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor if you feel unwell.

**P391** Collect spillage.

Storage P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal P501 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

HSNO Classifications	Physical Hazards	5.1.1B	<b>5.1.1B</b> Oxidising substances that are liquids or solids: medium haza	
	Health Hazards	6.1C	Substances that are acutely toxic- Toxic	
		6.3A	Substances that are irritating to the skin	
		6.4A	Substances that are irritating to the eye	
	Environmental Hazards	9.1A	Substances that are very ecotoxic in the aquatic environment	
		9.3B	Substances that are ecotoxic to terrestrial vertebrates	

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Nitric acid, zinc salt, hexahydrate	Zn(NO3)2.6H2O	10196-18-6	>=98 - 100 %

# **4. FIRST AID MEASURES**

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

Swallowed IF SWALLOWED: Rinse mouth, then drink large quantities of water. Do not induce vomiting. 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. Get

immediate medical advice/attention.

**Skin** IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Flush skin and hair with running water for at

least 15 minutes. 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. Call a Poison Centre or

doctor/physician for advice. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.

Advice to Doctor Treat symptomatically. Keep victim calm and warm - Obtain immediate medical care. Ensure that attending medical

personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves.

 $\label{lem:medical conditions Aggravated by} \ \ \mbox{No information available}.$ 

Exposure

# **5. FIRE FIGHTING MEASURES**

If safe to do so, move undamaged containers from fire area. Do not move cargo if cargo has been exposed to heat. Cool **General Measures** 

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: Will accelerate burning when involved in a fire. May intensify fire. May ignite combustibles.

Use flooding quantities of water for extinction - Do not use dry chemicals, Carbon dioxide (CO2) or foam. Large fire: Flood **Extinguishing Media** 

fire area with water from a protected position.

Fire and Explosion Hazard Risk of violent reaction or explosion! May explode from heating, shock, friction or contamination. The product may form

flammable or explosive dust clouds in air.

**Hazardous Products of** 

Combustion

Fire or heat may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides, Zinc oxides.

**Special Fire Fighting Instructions** Contain runoff from fire control or dilution water - Runoff may pollute waterways; Runoff may create fire or explosion

**Personal Protective Equipment** Wear self-contained breathing apparatus (SCBA) and chemical splash suit. Structural firefighter's uniform will provide

limited protection.

No Data Available **Flash Point Lower Explosion Limit** No Data Available No Data Available **Upper Explosion Limit Auto Ignition Temperature** No Data Available

**Hazchem Code** 1Y

### **6. ACCIDENTAL RELEASE MEASURES**

**General Response Procedure** Ensure adequate ventilation. ELIMINATE all ignition sources - Prevent exposure to heat. Do not contaminate - Keep

combustibles away from spilled material. Do not touch or walk through spilled material. Avoid accidents, clean up

immediately. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing.

**Clean Up Procedures** Use clean, non-sparking tools to transfer material to a clean, dry containers for recovery or disposal (see (SECTION 13).

Avoid dispersal of dust in the air. Move container from spill area.

Containment Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud.

Decontamination Ventilate area. Wash area down with excess water to remove residual material.

**Environmental Precautionary** 

Measures

Spillages and decontamination runoff should be prevented from entering drains and watercourses.

**Evacuation Criteria** Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher

ground. Large spill: Immediately contact Police or Fire Brigade; Consider initial downwind evacuation of areas within at

least 100 m.

Personal Precautionary Measures Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8).

# 7. HANDLING AND STORAGE

Handling Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure

> adequate ventilation - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dusts or mists and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). OXIDISING SUBSTANCE: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Take any precaution to avoid mixing with combustibles/organic materials. Avoid release to the environment -

Collect spillage (see SECTION 6).

Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers closed when not in use to ensure Storage

> contamination does not occur - check regularly for leaks or spills. Protect against physical damage and moisture. Keep away from heat and sources of ignition - No smoking. Keep store away from combustibles, organic or other readily oxidisable materials. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store locked up.

Container Keep in the original container. Containers of this material may be hazardous when empty since they retain product

residues (dust, solids); observe all warnings and precautions listed for the product.

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General No specific exposure standards are available for this product. For dusts from solid substances without specific

occupational exposure standards:

- Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m3 (measured as inhalable dust).

- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m3; TWA = 3 mg/m3 (respirable dust).

**Exposure Limits** No Data Available

**Biological Limits** No information available.

Engineering Measures 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.

**Personal Protection Equipment** - Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Dust

mask/particulate filter respirator. For emergencies or instances where the exposure levels are not known, use a full-face

positive-pressure, air-supplied respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Full-face shield and/or

safety glasses/goggles with side shield protection.

- Hand protection: Wear protective gloves. Recommended: Elbow-length impervious gloves (nitrile or laminated film).

- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Impervious

apron, coveralls, trousers, long sleeved shirt, closed in shoes and/or safety footwear.

**Special Hazards Precaustions** 

No information available.

**Work Hygienic Practices** 

Do not eat, drink or smoke when using this product. Always remove contaminated clothing and wash hands before eating, drinking, smoking or using the toilet. Wash contaminated clothing and other protective equipment before storage

or re-use.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Solid

**Appearance** Crystals or flakes Odour Slight, nitric acid Colour Colourless or white рΗ No Data Available **Vapour Pressure** No Data Available **Relative Vapour Density** No Data Available **Boiling Point** ca. 105 °C **Melting Point** ca. 36 °C

Freezing Point No Data Available

**Solubility** Soluble in water (200 g/100 g)

Specific Gravity 2.07

**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** No Data Available Density No Data Available **Specific Heat** No Data Available

**Molecular Weight** No Data Available **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 No Data Available Vapour Temperature No Data Available Viscosity **Volatile Percent** 0% @ 21°C **VOC Volume** No Data Available

**Additional Characteristics** Hygroscopic.

**Potential for Dust Explosion** The product may form flammable or explosive dust clouds in air.

**Fast or Intensely Burning** 

Characteristics

Risk of violent reaction or explosion! 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 No information available.

**Properties That May Initiate or Contribute to Fire Intensity** 

OXIDISING SUBSTANCE: Will accelerate burning when involved in a fire. May intensify fire. May ignite combustibles.

**Reactions That Release Gases or Vapours** 

Decomposition may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides, Zinc oxides.

**Release of Invisible Flammable** Vapours and Gases

No information available.

# 10. STABILITY AND REACTIVITY

**General Information** Substance is capable of reacting rapidly with reducing agents and combustible materials at elevated temperatures.

**Chemical Stability** Stable under ordinary conditions of use and storage.

**Conditions to Avoid** Avoid generating dust. Prevent exposure to heat and sources of ignition. Do not contaminate. Avoid exposure to

**Materials to Avoid** Incompatible/reactive with combustible/organic materials, reducing agents, carbon, sulphur, copper, sulphides,

phosphorous, alkalis, acids, amines.

**Hazardous Decomposition** 

**Products** 

Decomposition may produce irritating, toxic and/or corrosive gases, including Nitrogen oxides, Zinc oxides.

**Hazardous Polymerisation** Will not occur.

#### 11. TOXICOLOGICAL INFORMATION

### **General Information**

- Acute toxicity: Harmful if swallowed. Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and irritation/chemical burns to the gastrointestinal tract.
- Skin corrosion/irritation: Causes skin irritation. May cause effects such as severe itchiness, blistering, stinging and skin reddening.
- Eye damage/irritation: Causes serious eye irritation. May cause discomfort such as copious watering, and redness of the eyes.
- Respiratory/skin sensitisation: Zinc nitrate does not induce dermal sensitisation in animals.
- Germ cell mutagenicity: Non-mutagenic.
- Carcinogenicity: No information available.

- Reproductive toxicity: No information available.
- STOT (single exposure): May cause respiratory irritation. shortness of breath, headache, and nausea. Exposure to high dust concentrations may result in persistent headache, dizziness, nausea, vomiting, cyanosis, convulsions, and death.
- STOT (repeated exposure): No information available.
- Aspiration toxicity: No information available.

Acute

**Ingestion** Acute toxicity (Oral):

- LD50, Rat: 1,400 mg/kg

Carcinogen Category None

### 12. ECOLOGICAL INFORMATION

 Ecotoxicity
 No information available.

 Persistence/Degradability
 No information available.

 Mobility
 No information available.

Environmental Fate This material is expected to be toxic to aquatic life - Do NOT let product enter waterways, drains or sewers.

**Bioaccumulation Potential**This material is not expected to significantly bioaccumulate.

**Environmental Impact** No Data Available

### 13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations. Whatever cannot be saved for

recovery or recycling should be handled as hazardous waste and sent to an approved waste facility.

Special Precautions for Land Fill The product is suitable for disposal by landfill through an approved agent. Do NOT incinerate, as the by-products of

incineration are toxic (nitrogen oxides and zinc oxides).

# 14. TRANSPORT INFORMATION

# Land Transport (Australia)

ADG Code

Proper Shipping Name ZINC NITRATE

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

**EPG** 31 Oxidizing Substances

 UN Number
 1514

 Hazchem
 1Y

 Pack Group
 II

**Special Provision** No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name ZINC NITRATE

Class 5.1 Oxidising Substances

Subsidiary Risk(s)No Data AvailableEPG31 Oxidizing Substances

 UN Number
 1514

 Hazchem
 1Y

 Pack Group
 II

**Special Provision** No Data Available

# Land Transport (New Zealand)

NZS5433

Proper Shipping Name ZINC NITRATE

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

**EPG** 31 Oxidizing Substances

UN Number 1514
Hazchem 1Y
Pack Group ||

**Special Provision** No Data Available

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

**US DOT** 

Proper Shipping Name ZINC NITRATE

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available ERG 140 Oxidizers

UN Number 1514
Hazchem 1Y
Pack Group ||

**Special Provision** No Data Available

# **Sea Transport**

IMDG Code

Proper Shipping Name ZINC NITRATE

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

 UN Number
 1514

 Hazchem
 1Y

 Pack Group
 II

**Special Provision** No Data Available

EMS F-H, S-Q Marine Pollutant Yes

# **Air Transport**

IATA DGR

Proper Shipping Name ZINC NITRATE

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

UN Number 1514 Hazchem 1Y

Pack Group ||

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)

#### 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 HSR005093

# **National/Regional Inventories**

Australia (AIIC) Listed

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 ZINITR1000, ZINITR1001, ZINITR1002, ZINITR1003, ZINITR1004, ZINITR1100, ZINITR1101, ZINITR1100, ZINITR11

ZINITR1801, ZINITR1802, ZINITR1803, ZINITR1804, ZINITR1805, ZINITR1806, ZINITR1807, ZINITR1808, ZINITR1809,

ZINITR1810, ZINITR1811, ZINITR2000, ZINITR2001, ZINITR5000

Revision

**AICS** Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square CentimetresCO2 Carbon Dioxide

**COD** Chemical Oxygen Demand **deg C (°C)** Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Farenheit

**g** Grams

g/cm3 Grams per Cubic Centimetre

g/I Grams per Litre

**HSNO** Hazardous Substance and New Organism **IDLH** Immediately Dangerous to Life and Health **immiscible** Liquids are insoluable in each other.

inHg Inch of Mercury inH2O Inch of Water

**K** Kelvin **kg** Kilogram

kg/m<sup>3</sup> Kilograms per Cubic Metre

**Ib** 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.

Itr 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 Heath 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