

1. IDENTIFICATION

Product Name Ammonium Nitrate (UN1942)

Other Names Chemically Pure Ammonium Nitrate (CPAN); Porous Prilled Ammonium Nitrate (PPAN); Security Sensitive Ammonium

Nitrate (SSAN)

Uses Feed materials; Intermediates; Explosives; Fertilizers; Oxidizing agent; Pharmaceuticals.

Chemical Family No Data Available

Chemical Formula H4N2O3

Chemical Name Nitric acid, ammonium salt

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.

OrganisationLocationTelephoneChemcallNew Zealand0800-24362

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

Redox Ltd Auckland Office NZBN 9429038410239











Acute Toxicity (Oral) - Category 5

Serious Eye Damage/Irritation - Category 2A

Pictograms





Signal Word Warning

Hazard Statements H272 May intensify fire; oxidizer.

H303 May be harmful if swallowed.H319 Causes serious eye irritation.

AUH031 Contact with acids liberates toxic gas

AUH044 Risk of explosion if heated under confinement

Precautionary Statements Prevention **P210** Keep away from heat.

P221 Take any precaution to avoid mixing with combustibles/organic material.

P280 Wear protective gloves/eye protection/face protection.

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

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

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

if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor if you feel unwell.

Disposal P501 Dispose of contents/container in accordance with local / regional / national /

international regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Ammonium nitrate	H4N2O3	6484-52-2	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed IF SWALLOWED: Rinse mouth with water, then drink plenty 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: Do not rub affected area! 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: Immediately flush skin and hair with running water for at least 15 minutes, while removing contaminated

clothing and shoes. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before

reuse.

*Contaminated clothing may be a fire risk when dry.

Inhaled IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical

advice/attention if respiratory symptoms occur. Give artificial respiration if victim is not breathing. Administer oxygen if

breathing is difficult.

Advice to Doctor Keep victim calm and warm. Ensure that medical personnel are aware of the material(s) involved and take precautions to



protect themselves.

Medical Conditions Aggravated by No information available.

Exposure

5. FIRE FIGHTING MEASURES

General Measures Immediately contact Police or Fire Brigade. In Australia, tell them "Security Sensitive Ammonium Nitrate is involved in the

incident". If safe to do so, move undamaged containers from fire areas. 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. Ensure that any molten road

bitumen has been adequately cooled with water before allowing graders and so on to work on clean-up.

*May react dangerously with hydrocarbons (fuels), organic matter, other contaminants or when hot, molten and confined, to form a mass explosive of Division 1.1. In this condition it should be treated as an explosive and the explosive public safety evacuation distances apply! Large fire: Consider initial evacuation of areas within at least 800 m in all directions.

Flammability Conditions OXIDISING SOLID: Will not burn but will increase intensity of a fire. This substance will accelerate burning when involved

in a fire. May ignite combustibles.

Extinguishing Media Use flooding quantities of water, delivered as a heavy spray. Maintain flow of water until mass has cooled. Do not use dry

chemical or Carbon dioxide (CO2) or foam.

*Large Fire: Flood fire areas with water from protected position or use unmanned hose holders or monitor nozzles. If

impossible to extinguish fire, protect surroundings, withdraw from area and allow fire to burn.

Fire and Explosion Hazard Risk of violent reaction or explosion! May explode from heating or detonation if contaminated or confined.

*Rigid containers may explode when strongly heated. FIBCs will melt and not contain pressure under similar conditions.

Hazardous Products of

Combustion

Fire may produce irritating and/or toxic gases. When exposed to fierce heat, toxic oxides of nitrogen (brown fumes) are aiven off.

Contain runoff from fire control or dilution water - Runoff may cause pollution. Runoff may create fire hazard!

Special Fire Fighting Instructions Personal Protective Equipment

In presence of fire, wear positive pressure self-contained breathing apparatus (SCBA) and chemical splash suit. Structural

firefighter's uniform will provide limited protection.

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

1Y **Hazchem Code**

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure Immediately contact Police or Fire Brigade. In Australia, tell them "Security Sensitive Ammonium Nitrate is involved in the

> incident". Ensure adequate ventilation - Ventilate closed spaces before entering. Prevent exposure to heat. ELIMINATE all ignition sources. Do not contaminate material - Keep combustibles (oil, fuel, wood, paper, clothing) away from spilled material. Clean up spillages immediately. Do not attempt to smother smouldering spillage in any way! Avoid breathing

dust/fumes and contact with eyes, skin and clothing.

Clean Up Procedures Use clean tools to transfer material to clean, dry plastic container and cover loosely. Move container from spill area. Do

NOT return spilled material to original container for re-use!

*This material is classified as a Security Sensitive Ammonium Nitrate (SSAN). Spillage recovery needs to be appropriately

documented and material accurately accounted for.

Containment Stop leak if you can do it without risk. Prevent entry into waterways, drains or confined areas.

Decontamination Following product recovery, flush area with water.

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. Evacuate personnel to safe areas. Keep unauthorised personnel away.

Keep upwind and to higher ground. Large spill: Consider initial downwind evacuation of areas within 100 m.

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

absence of fire, wear overalls, safety glasses and protective gloves.



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 with care and in accordance with good industrial hygiene and safety practice. Avoid generating dust. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). OXIDISING SOLID: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Do not contaminate - Do not mix with other

chemicals!

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

regularly for spills. Protect from moisture (hygroscopic). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking. Keep away from combustibles and other incompatible materials (see SECTION 10). Ensure ammonium nitrate is stored securely and in accordance with regulations/controls issued by relevant authority. *Concrete floors are recommended for storage. If ammonium nitrate is to be stored in bulk, the surface must be treated so that it is resistant to attack. Bulk ammonium nitrate should not be stored on a bituminous floor. Floor drains, recesses or other areas of possible confinement should be eliminated to prevent entrapment/confinement of molten (flowing)

ammonium nitrate during a fire.

Container Keep in the original container.

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).

DECOMPOSITION PRODUCT: Nitrogen dioxide (CAS No. 10102-44-0):

- Safe Work Australia Exposure Standard: TWA = 3 ppm (5.6 mg/m3); STEL = 5 ppm (9.4 mg/m3).

- New Zealand Workplace Exposure Standard (interim WES): TWA = 1 ppm (1.9 mg/m3); Propose to change to TWA of 0.2

ppm in the year 2022.

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: Wear respiratory protection in case of inadequate ventilation or if an inhalation risk exists.

Recommended: Dust mask/particulate respirator or supplied-air respirator (refer to AS/NZS 1715 & 1716).

- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Tightly-fitting goggles.

- Hand protection: Wear protective gloves. Recommended: Impervious gloves, e.g. PVC gloves.

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

fire/flame resistant/retardant clothing. Long sleeved clothing/Overalls, Boots.

Special Hazards Precaustions This product when stored in a confined, unventilated space/hold can give off ammonia or other odour and lead to the

depletion of oxygen within this space and other confined spaces. It is therefore essential that ventilation is carried out

prior to entry.

Work Hygienic Practices Do not eat, drink or smoke when using this product. 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

Physical State Solid

Appearance Granules or prills



Odour Odourless
Colour White

pH 5.4 (0.1M sol'n)

Vapour Pressure No Data Available

Relative Vapour Density No Data Available

Boiling Point Decomposes

Melting Point 160 - 170 °C

Freezing Point No Data Available

Solubility Very soluble in water - Slightly soluble in alcohol; Insoluble in acetone

Specific Gravity 1.72

Flash Point

Auto Ignition Temp

No Data Available

Evaporation Rate

No Data Available

Bulk Density

No Data Available

Corrosion Rate

No Data Available

Decomposition Temperature 210 °C

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 **Vapour Temperature** No Data Available Viscosity No Data Available **Volatile Percent** No Data Available **VOC Volume** No Data Available

Additional Characteristics Hygroscopic: absorbs moisture or water from surrounding air.

Potential for Dust Explosion No information available.

Fast or Intensely Burning

Characteristics

Risk of violent reaction or explosion! May intensify fire; oxidiser. May explode from heating or detonation if contaminated

or confined.

Flame Propagation or Burning

Rate of Solid Materials

No information available.

Non-Flammables That Could Contribute Unusual Hazards to a

Properties That May Initiate or

Contribute to Fire Intensity

Reactions That Release Gases or

Vapours

Release of Invisible Flammable Vapours and Gases

May react dangerously with hydrocarbons (fuels), organic matter, other contaminants or when hot, molten and confined, to form a mass explosive of Division 1.1. In this condition it should be treated as an explosive and the explosive public safety evacuation distances apply!

OXIDISING SOLID: Will not burn but will increase intensity of a fire. This substance will accelerate burning when involved in a fire. May ignite combustibles.

Fire may produce irritating and/or toxic gases. When exposed to fierce heat, toxic oxides of nitrogen (brown fumes) are given off.

No information available.

10. STABILITY AND REACTIVITY

General Information Contact with acids liberates toxic gas. Risk of explosion if heated under confinement. When molten it may decompose

violently due to shock or pressure.



Chemical Stability Stable under recommended storage and handling conditions. May explode from heating or detonation if contaminated or

confined

Conditions to Avoid Avoid generating dust. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Do not

contaminate material.

Materials to Avoid Incompatible/reactive with tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, bromates, chlorates,

chlorites, hypochlorites, perchlorates, chloroisocyanurates, nitrites, powdered metals, strong acids, reducing agents,

permanganates, combustible/organic materials, brass, bronze, copper, zinc.

Hazardous Decomposition

Products

Fire may produce irritating and/or toxic gases. When exposed to fierce heat, toxic oxides of nitrogen (brown fumes) are

given off.

*Contamination with chlorine bleaches, pool chlorine, hypochlorites may result in the formation of explosive nitrogen

trichloride.

Hazardous Polymerisation Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information

- Acute toxicity: May be harmful if swallowed. May cause gastrointestinal irritation, with nausea, vomiting and diarrhoea. This product contains nitrates, which may be reduced to nitrites by intestinal bacteria. Nitrites may affect the blood (methaemoglobinaemia) and blood vessels (vasodilation and a fall in blood pressure). Nitrates can be absorbed through cut, burnt or broken skin. DECOMPOSITION PRODUCT: Nitrogen dioxide is "Fatal if inhaled"; Inhalation of the gas may result in chest discomfort, shortness of breath and possible pulmonary oedema, the onset of which may be delayed.
- Skin corrosion/irritation: Prolonged contact may cause irritation, redness and itching.
- Eye damage/irritation: Causes serious eye irritation.
- Respiratory/skin sensitisation: All inorganic nitrate substances show no skin sensitisation [ECHA].
- Germ cell mutagenicity: Ammonium nitrate is not considered genotoxic.
- Carcinogenicity: Nitrate or nitrite, (ingested) under conditions that result in endogenous nitrosation, is classified by the IARC Monographs as "Probably carcinogenic to humans" (Group 2A).
- Reproductive toxicity: No reproductive or developmental effects observed [read-across: Potassium nitrate].
- STOT (single exposure): High concentration of airborne material may cause irritation to the nose and upper respiratory tract; symptoms may include coughing and sore throat. Absorption of Ammonium nitrate by inhalation, ingestion or through burnt or broken skin may cause dilation of blood vessels and methaemoglobinaemia; May cause dizziness, drowsiness, nausea and headache due to central nervous system effects.
- STOT (repeated exposure): Prolonged or repeated exposure may cause skin dryness or cracking; may lead to dermatitis.
- Aspiration toxicity: No information available.

Acute

Ingestion Acute toxicity (Oral):

- LD50, Rat (male/female): 2,950 mg/kg bw. [ECHA].

Carcinogen Category None

12. ECOLOGICAL INFORMATION

Ecotoxicity Aquatic toxicity:

- All nitrates show a low or negligible toxicity to fish [ECHA].

- All nitrates show a low or negligible toxicity to aquatic invertebrates [ECHA].

- All nitrates show a low or negligible toxicity to algae [ECHA].

Persistence/Degradability In aqueous solution, ammonium nitrate is completely dissociated into the ammonium ion (NH4+) and the nitrate anion

(NO3 -). Hydrolysis of ammonium nitrate does not occur.

Mobility Ammonium nitrate will completely dissociate into ions in water and thus has a low potential for adsorption. Nitrate is not

bound to the soil and will follow water movements.

Environmental Fate Nitrate substances are known to play an important role in the nutrient enrichment of surface waters, commonly called

eutrophication; characterised by elevated nutrient concentrations, which stimulate the growth of certain algal species, favoring simple algae and plankton growths. The oxygen concentration in water will generally decrease, leading to a

negative effect on the biodiversity of the ecosystem.

Bioaccumulation Potential Low potential for bioaccumulation.



Environmental Impact No Data Available

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container in accordance with local/regional/national regulations. Depending on the degree and

nature of contamination, may be disposed of as a fertiliser.

Special Precautions for Land Fill As this material is classified as a Security Sensitive Ammonium Nitrate (SSAN) disposal of material needs to be

appropriately documented and material accurately accounted for.

14. TRANSPORT INFORMATION

Land Transport (New Zealand)

NZS5433

Proper Shipping NameAMMONIUM NITRATE, with not more than 0.2% total combustible material, including any organic substance

calculated as carbon, to the exclusion of any other added substance

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

EPG 50 Ammonium Nitrate

UN Number 1942 Hazchem 1Y Pack Group III

Special Provision No Data Available

Sea Transport IMDG Code

Proper Shipping Name AMMONIUM NITRATE, with not more than 0.2% total combustible material, including any organic substance

calculated as carbon, to the exclusion of any other added substance

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

UN Number 1942 Hazchem 1Y Pack Group III

Special Provision No Data Available

EMS F-H, S-Q **Marine Pollutant** No

Air Transport

IATA DGR

Proper Shipping NameAMMONIUM NITRATE, with not more than 0.2% total combustible material, including any organic substance

calculated as carbon, to the exclusion of any other added substance

Class 5.1 Oxidising Substances

Subsidiary Risk(s) No Data Available

UN Number 1942 Hazchem 1Y



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 HSR001310 (Reissued)

National/Regional Inventories

Australia (AIIC) Listed

Canada (DSL) Not Determined

Canada (NDSL) Not Determined

China (IECSC) Not Determined

Europe (EINECS) 229-347-8

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) Not Determined

16. OTHER INFORMATION

Related Product Codes AMNITB1000, AMNITR0015, AMNITR0017, AMNITR0500, AMNITR0501, AMNITR0501, AMNITR1000, AMNITR10001,

AMNITR1002, AMNITR1003, AMNITR1004, AMNITR1005, AMNITR1006, AMNITR1007, AMNITR1008, AMNITR1009, AMNITR1010, AMNITR1011, AMNITR1012, AMNITR1013, AMNITR1014, AMNITR1015, AMNITR1016, AMNITR1017, AMNITR1018, AMNITR1019, AMNITR1020, AMNITR1021, AMNITR1022, AMNITR1023, AMNITR1024, AMNITR1025, AMNITR1026,

AMNITR1029, AMNITR1020, AMNITR1021, AMNITR1022, AMNITR1023, AMNITR1024, AMNITR1025, AMNITR1026, AMNITR1027, AMNITR1028, AMNITR1029, AMNITR1030, AMNITR1100, AMNITR1200, AMNITR1300, AMNITR1350,



AMNITR1400, AMNITR1500, AMNITR1600, AMNITR1700, AMNITR1800, AMNITR1805, AMNITR1810, AMNITR1811, AMNITR1812, AMNITR1900, AMNITR2000, AMNITR2001, AMNITR2002, AMNITR2100, AMNITR2200, AMNITR2300, AMNITR2400, AMNITR2500, AMNITR2700, AMNITR2800, AMNITR3000, AMNITR3001, AMNITR3100, AMNITR3500, AMNITR3600, AMNITR3700, AMNITR3800, AMNITR3900, AMNITR4000, AMNITR4500, AMNITR5500, AMNITR5500, AMNITR6000, AMNITR6500, AMNITR7000, AMNITR7300, AMNITR7400, AMNITR7500, AMNITR7600, AMNITR7700, AMNITR7800, AMNITR7900, AMNITR7901, AMNITR8000, AMNITR8100, AMNITR8200, AMNITR8300, AMNITR8301, AMNITR8302, AMNITR8400, AMNITR8401, AMNITR8500, AMNITR8501, AMNITR8502, AMNITR8700, AMNITR8800, AMNITR8900, AMNITR8901, AMNITR9000, AMNITR9001, AMNITR9503, AMNITR9504, AMNITR9514, AMNITR9600

4 Revision

Revision Date 01 Jun 2021 Reason for Issue update sds < Less Than Key/Legend > 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 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 inH20 Inch of Water

K Kelvin kg Kilogram

kg/m³ 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

mmH20 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

