

SAFETY DATA SHEET



Revision date: 09-Nov-2021

Revision Number 10

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name AMMONIUM NITRATE

Product Code(s) 000022017701

Other means of identification

Proper shipping name AMMONIUM NITRATE

UN number 1942

CAS No. 6484-52-2

Synonyms Nitropril, Anopril, Marbyl, Ammonium nitrate prills, LDAN, Low density ammonium nitrate, PPAN, Porous prilled ammonium nitrate

Recommended use of the chemical and restrictions on use

Recommended use Explosives manufacture. Restricted to professional users.

This material is classified as a Security Sensitive Ammonium Nitrate (SSAN). Various government controls may apply to this material.

Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier

Orica New Zealand Limited
Street Address:
Brunnings Road
Carters Beach
Westport, 7892
New Zealand

Telephone Number: +64 3 788 8163

For further information, please contact

Contact Point Product Safety Department

Emergency telephone number

Emergency Telephone 0 800 734 607 (ALL HOURS)

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Classified as a Dangerous Good according to NZS 5433 Transport of Dangerous Goods on Land; DANGEROUS GOODS.

Classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

GHS Classification**SIGNAL WORD**

Warning

EPA New Zealand HSNO approval code or group standard HSR001310

Oxidizing solids	Category 3
Serious eye damage/eye irritation	Category 2

Label elements**Hazard statements**

H272 - May intensify fire; oxidizer

H319 - Causes serious eye irritation

Precautionary Statements - Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Keep away from clothing and other combustible materials

Take any precaution to avoid mixing with combustibles

Wash hands thoroughly after handling

Wear protective gloves / protective clothing / eye protection / face protection

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

Precautionary Statements - Storage

No storage statements

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

Contact with acids liberates toxic gas

Risk of explosion if heated under confinement.

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
Ammonium nitrate	6484-52-2	>98% w/w
Other minor ingredients	-	<2% w/w

4. FIRST AID MEASURES**Description of first aid measures****General advice**

For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor. Show this safety data sheet to the doctor in attendance.

Emergency telephone numberPoisons Information Center, New Zealand: 0800 764 766
Poisons Information Center, Australia: 13 11 26

Inhalation	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. Immediately give oxygen if victim turns blue (lips, ears, fingernails). Give artificial respiration if victim is not breathing. Get medical attention immediately if symptoms occur.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
Skin contact	Wash off immediately with soap and plenty of water. Nitrates can be absorbed through cut, burnt or broken skin. Call a physician if symptoms occur. Take off contaminated clothing and wash before reuse.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. Avoid contact with skin, eyes, and clothing. Do not breathe dust. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms Irritation. Nitrates can be absorbed through cut, burnt or broken skin.

Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically. Treat as for exposure to nitrates. May cause methemoglobinemia. Clinical findings: The smooth muscle relaxant effect of nitrate salts may lead to headache, dizziness and marked hypotension. Cyanosis is clinically detectable when approximately 15% of the haemoglobin has been converted to methaemoglobin (ferric iron).

Symptoms such as headache, dizziness, weakness and dyspnoea occur when methemoglobin concentrations are 30% to 40%; at levels of about 60% stupor, convulsions, coma and respiratory paralysis occur and the blood is a chocolate brown colour. At higher levels death may result. Spectrophotometric analysis can determine the presence and concentration of methemoglobin in the blood.

Treatment:

1. Give 100% oxygen.
2. In cases of (a) ingestion: use gastric lavage, (b) contamination of skin (unburnt or burnt): continue washing to remove salts.
3. Observe blood pressure and treat hypotension if necessary.
4. When methaemoglobin concentrations exceed 40% or when symptoms are present, give methylene blue 1 or 2 mg/kg body weight in a 1% solution by slow intravenous injection. If cyanosis has not been resolved within one hour a second dose of 2 mg/kg body weight may be given. The total dose should not exceed 7 mg/kg body weight as unwanted effects such as dyspnoea, chest pain, vomiting, diarrhoea, mental confusion and cyanosis may occur. Without treatment methaemoglobin levels of 20-30% revert to normal within 3 days.
5. Bed rest is required for methaemoglobin levels in excess of 40%.
6. Continue to monitor and give oxygen for at least two hours after treatment with methylene blue.
7. Consider transfer to centre where haemoperfusion can be performed to remove the nitrates from the blood if the condition of the patient is unstable.

Effects from exposure to decomposition products including nitrogen dioxide (possible decomposition component) can include chest discomfort, shortness of breath and possible pulmonary oedema, the onset of which may be delayed. The exposed person should be kept under medical surveillance for 24 hours for delayed onset of pulmonary oedema.

Further observation for 2-3 weeks may be required to detect the onset of the inflammatory

changes of bronchiolitis fibrosa obliterans.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Water spray. Flood fire area with water from a distance.

Unsuitable extinguishing media Carbon dioxide (CO₂). Dry chemical.
Extinguishing methods based on smothering are ineffective in the case of oxidizing agents.

Specific hazards arising from the chemical

Specific hazards arising from the chemical WARNING:
Explosion risk in case of fire, especially if contaminated or confined. Molten product may explode from friction, shock or containment. In the case of an intense fire evacuate all personnel to at least 1000 m.

Oxidizing substance. Increases intensity of a fire, even in the absence of oxygen. Ammonium nitrate on its own is not combustible, however, it supports the combustion of other materials. Contact with combustible material may cause fire. Decomposes on heating emitting irritating white fumes and/or brown fumes. Brown fumes indicate the presence of toxic oxides of nitrogen. Containers may explode when heated.

Hazardous combustion products Nitrogen oxides. Nitrous oxide. Ammonium nitrate fumes. Ammonia. Nitric acid.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters WARNING:
A major fire may involve a risk of explosion. Evacuate area immediately. Allow fire to burn out. An adjacent detonation may also involve the risk of explosion. Heating can cause decomposition of the material, which can lead to the containers exploding. Confinement of material may result in detonation.

In the case of an intense fire evacuate all personnel to a least 1000 metres. Police and emergency personnel should be notified immediately. If possible remove vehicles and further heat and ignition sources from area. Do not return to areas until the site has completely cooled down.

Decomposes on heating emitting irritating white fumes and/or brown fumes. Brown fumes indicate the presence of toxic oxides of nitrogen. On detection of fire the compartment(s) should be opened up to provide maximum ventilation. Fire-fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to products of combustion/decomposition. If safe to do so, remove containers from path of fire. If safe to do so, prevent molten material from being confined in drains, pipes, etc. If safe to do so, cool containers and adjacent areas with flooding quantities of water until well after fire is out.

Hazchem code 1Y

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid contact with skin, eyes, and clothing. Use personal protective equipment as required. Wash thoroughly after handling.

Other information	Keep combustibles (wood, paper, oil, etc) away from spilled material. Ventilate the area. Refer to protective measures listed in Sections 7 and 8. In the case of a transport accident notify the Police, Regulatory Authorities and Orica Australia Pty Ltd (Telephone: 1800 033 111 -- 24 hour service) and/or Orica New Zealand Ltd (Telephone: 0800 734 607 -- 24 hour service) or Orica International (Telephone: +61 3 9663 2130 -- 24 hour service Australia).
For emergency responders	Use personal protection recommended in Section 8.
<u>Environmental precautions</u>	
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.
<u>Methods and material for containment and cleaning up</u>	
Methods for containment	Prevent further leakage or spillage if safe to do so. Keep ammonium nitrate out of confined areas, including sewers, due to risk of explosion.
Methods for cleaning up	Clean up spillages immediately. Contain - prevent run off into drains and waterways. Wear protective equipment to prevent skin and eye contact and breathing in dust. Sweep or vacuum up, but avoid generating dust. Collect in properly labelled containers or drums for disposal (loose fitting lids). Use clean shovel/equipment. DO NOT return spilled material to original container. Ensure that contaminated material (clothing, pallets) is thoroughly washed. This material is classified as a Security Sensitive Ammonium Nitrate (SSAN). Spillage recovery needs to be appropriately documented and material accurately accounted for.
<u>Precautions to prevent secondary hazards</u>	
Prevention of secondary hazards	Clean contaminated objects and areas thoroughly observing environmental regulations.
Hazardous Substances (Emergency Management) Regulations 2001	Emergency management plans complying with applicable legislation should be in place.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with skin, eyes, and clothing. Take off contaminated clothing and wash before reuse. Use personal protection equipment. Wash thoroughly after handling. Keep out of reach of children. Handle with care. Do not mix with other chemicals.
General hygiene considerations	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes, and clothing. Wear suitable gloves and eye/face protection.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from sources of heat or ignition. Store away from combustibles including organic materials, reducing agents, metal powders, strong acids, nitrites, chlorates, chlorides and permanganates. Keep containers closed when not in use - check regularly for spills.
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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. Floors drains, recesses or other areas of possible confinement should be eliminated to prevent entrapment/confinement of molten (flowing) ammonium nitrate during a fire.

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.

Ensure ammonium nitrate is stored securely and in accordance with regulations/controls issued by relevant authority. The secure storage of ammonium nitrate can include but is not limited to the use of security plans, locking the facility/container with physical restraining items, validation and record keeping of all stock, and where deemed necessary through a risk management approach constant surveillance.

Incompatible materials

Ammonium nitrate is incompatible with, and must be stored away from, tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, bromates, chlorates, chlorites, hypochlorites, perchlorates, chloroisocyanurates, nitrites, powdered metals, strong acids, reducing agents, permanganates, combustible materials, brass, bronze, copper, zinc. Incompatible with combustible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Limits**

No value assigned for this specific material by the New Zealand Workplace Health & Safety Authority. However, Workplace Exposure Standard(s) for particulates and decomposition product(s):

Particulates not otherwise classified: 8hr WES-TWA 10 mg/m³ (inhalable dust) or 3 mg/m³ (respirable dust)
Nitrogen dioxide: WES-TWA 1 ppm, 1.9 mg/m³

As published by the New Zealand Workplace Health & Safety Authority.

WES - TWA (Workplace Exposure Standard - Time Weighted Average) - The eight-hour, time-weighted average exposure standard is designed to protect the worker from the effects of long-term exposure.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls**Engineering controls**

Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, DUST MASK.



Eye/face protection	Goggles.
Hand protection	Impervious gloves.
Skin and body protection	Boots. Wear suitable protective clothing. Overalls.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Solid
Appearance	Granules or Prills
Color	White to Off-white
Odor	Negligible
Odor threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	4.5-5.2 (10% solution, 20°C)	
Melting point / freezing point	160-169°C	
Boiling point / boiling range	Decomposes	None known
Flash point	Not applicable	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	Not applicable	
Lower flammability or explosive limits	Not applicable	
Vapor pressure	Negligible	None known
Vapor density	No data available	None known
Relative density	0.72-0.78 g/cm ³ (bulk density)	
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	ca. 210°C	
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Powerful oxidizing agent. Oxidizing agents may cause vigorous reactions. Contact with acids liberates toxic gas. Hygroscopic: absorbs moisture or water from surrounding air.

Chemical stability

Stability Stable under normal ambient and anticipated storage and handling conditions when free of contaminants including inorganic and organic materials. May explode under confinement and high temperature, but not readily detonated. May explode due to nearby detonations.

Explosion data

Sensitivity to mechanical impact Not available.

Sensitivity to static discharge Not available.

Possibility of hazardous reactions

Possibility of hazardous reactions Oxidizing agent. Supports combustion of other materials and increases intensity of a fire. Will react with organic materials, and reducing agents. Reacts with nitrites, chlorides, chlorates, permanganates, metal powders. When mixed with strong acids, and occasionally during blasting, it produces an irritating toxic brown gas, mostly of nitrogen dioxide. When molten (such as in a fire situation) may decompose violently due to shock or pressure.

Contamination with chlorine bleaches, pool chlorine, hypochlorites may result in the formation of explosive nitrogen trichloride. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding.

Conditions to avoid

Conditions to avoid Heat, flames and sparks. Dust formation. Moisture. Incompatible materials. Avoid contact with combustible substances. Avoid contact with other chemicals.

Incompatible materials

Incompatible materials Ammonium nitrate is incompatible with, and must be stored away from, tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, bromates, chlorates, chlorites, hypochlorites, perchlorates, chloroisocyanurates, nitrites, powdered metals, strong acids, reducing agents, permanganates, combustible materials, brass, bronze, copper, zinc. Incompatible with combustible materials.

Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides. Nitrous oxide. Ammonium nitrate fumes. Ammonia. Nitric acid. When heated to decomposition (unconfined) ammonium nitrate produces nitrous oxide, white ammonium nitrate fumes and water. When mixed with strong acids, and occasionally during blasting, it produces an irritating toxic brown gas, mostly nitrogen dioxide. When molten it may decompose violently due to shock or pressure.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the

chemical is mishandled and overexposure occurs are:

Inhalation Breathing in dust may result in respiratory irritation. Blasting may produce a toxic brown gas of nitrogen dioxide. Inhalation of the gas may result in chest discomfort, shortness of breath and possible pulmonary oedema, the onset of which may be delayed. Absorption of ammonium nitrate by inhalation, ingestion or through burnt or broken skin may cause dilation of blood vessels by direct smooth muscle relaxation and may also cause methaemoglobinaemia. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.

Eye contact Causes serious eye irritation. Dust contact with the eyes can lead to mechanical irritation.

Skin contact May cause irritation. Nitrates can be absorbed through cut, burnt or broken skin.

Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Ingestion of larger amounts may cause defects to the central nervous system (e.g. dizziness, headache). May cause a lowering of blood pressure (hypotension).

Symptoms Irritation.

Acute toxicity

Numerical measures of toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ammonium nitrate	= 2217 mg/kg (Rat)	-	> 88.8 mg/L (Rat) 4 h

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization Not classified.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Chronic effects: NITRATES: 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. In humans and animals methaemoglobinaemia has occurred under untreated circumstances following the ingestion of nitrates.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity

Keep out of waterways.
Ammonium nitrate is a plant nutrient. Large scale contamination may kill vegetation and cause poisoning in livestock and poultry.

Ammonium nitrate was evaluated at 5, 10, 25 and 50 mg (NH₄⁺)/L. The fertility of Daphnia magna was decreased at 50 mg/L. Post embryonic growth of crustacea was impaired at 10, 25 and 50 mg/L. Can stimulate weed and algal growth in static surface waters.

Considered to be of low toxicity to aquatic life.

Terrestrial ecotoxicity

There is no data for this product.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ammonium nitrate	-	LC50: 65 - 85mg/L (48h, Cyprinus carpio)	-

Persistence and degradability

Persistence and degradability

Biodegradable.

Bioaccumulative potential

Bioaccumulation

Bioaccumulation is not expected.

Mobility

Mobility in soil

Water soluble. Expected to be mobile in soil.

Chemical name	Partition coefficient
Ammonium nitrate	-3.1

Other adverse effects

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products

Dispose of product in packaging/container in a way that is consistent with the Hazardous Substances (Disposal) Notice 2017 and the Act, and Hazardous Substances (Amendments and Revocations) Notice 2020. Treat the chemical using a method that changes the characteristics or composition of the chemical so that the chemical is no longer a hazardous chemical; or export the chemical from New Zealand as waste. Class 2, 3 and 4 chemicals - may not be disposed of into or onto a landfill or sewage facility. They may only be burnt in certain situations. Class 2.1.1, 3.1 and 4.1.1 chemicals may only be discharged into the environment as waste if the substance will not at any time come into contact with class 1 or class 5 substances; and there will be no ignition source in the vicinity of the disposal site at any time and if the substance were to ignite, no person, or place where a person may legally be, would be exposed to an unsafe level of heat radiation.

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.

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Empty containers must be either rendered totally unusable, or if to be recycled for use, decontaminated by rinsing thoroughly with water. Rinsing water needs to be disposed of carefully.

14. TRANSPORT INFORMATION**ROAD AND RAIL TRANSPORT**

Classified as a Dangerous Good according to NZS 5433 Transport of Dangerous Goods on Land; DANGEROUS GOODS.

UN number 1942
Proper shipping name AMMONIUM NITRATE
Hazard class 5.1
Packing group III
Hazchem code 1Y

IATA

UN number 1942
UN proper shipping name AMMONIUM NITRATE
Transport hazard class(es) 5.1
Packing group III

IMDG

UN number 1942
UN proper shipping name AMMONIUM NITRATE
Transport hazard class(es) 5.1
Packing group III
IMDG EMS Fire F-H
IMDG EMS Spill S-Q

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****New Zealand****National regulations**

See section 8 for national exposure control parameters

Various regulations/controls/authorisations/licences may apply governing the manufacture, importation, exportation, use, handling, storage, sale/supply, transport and disposal of ammonium nitrate. Ammonium nitrate is considered a security sensitive material and loss, theft, attempted theft and unexplained discrepancies may need to be reported to authorities. Record keeping and licensing of individuals may be required.

EPA New Zealand HSNO approval code or group standard HSR001310

International Inventories

NZIoC All the constituents of this material are listed on the New Zealand Inventory of Chemicals.
TSCA Contact supplier for inventory compliance status.
DSL/NDL Contact supplier for inventory compliance status.
EINECS/ELINCS Contact supplier for inventory compliance status.
ENCS Contact supplier for inventory compliance status.
IECSC Contact supplier for inventory compliance status.
KECL Contact supplier for inventory compliance status.

PICCS Contact supplier for inventory compliance status.
AIIC All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

Legend:

NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
- Australian Inventory of Industrial Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2021

Prepared By This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

Issuing Date: 09-Nov-2021

Reason(s) For Issue: 5 Yearly Revised Primary SDS

Revision Note:

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGL(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals
 Food Research Journal
 Hazardous Substance Database
 International Uniform Chemical Information Database (IUCLID)
 Japan GHS Classification
 Australian Industrial Chemicals Introduction Scheme (AICIS)
 NIOSH (National Institute for Occupational Safety and Health)
 National Library of Medicine's ChemID Plus (NLM CIP)

National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since The Supplier cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Supplier representative or The Supplier at the contact details on page 1.

The Supplier's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet