

SAFETY DATA SHEET



Revision date: 14-Jun-2023

Revision Number 7

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name AMMONIUM NITRATE LIQUID

Product Code(s) 000022035801

Other means of identification

Proper shipping name HOT AMMONIUM NITRATE, LIQUID

UN number 2426

Synonyms Hot ammonium nitrate liquid, ANSOL, Ammonium nitrate liquid >80% - <=93%, Ammonium nitrate solution >80% - <=93%

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use Production of emulsion explosives. Restricted to professional users.

Uses advised against No information available

Supplier

Orica Australia Pty Ltd
ABN: 99 004 117 828
1 Nicholson Street
Melbourne 3000
Australia

Telephone Number: +61 3 9665 7111

Facsimile: +61 3 9665 7937

Emergency telephone number

Emergency telephone number **AUSTRALIA: 1 800 033 111 (ALL HOURS)**
INTERNATIONAL AUSTRALIA: +61 3 9663 2130 (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

GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

Oxidizing liquids

Category 3

Serious eye damage/eye irritation	Category 2
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SIGNAL WORD

Warning

Label elements

Flame over circle
Exclamation mark

**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

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

AUH031 - Contact with acids liberates toxic gas

General Hazards Causes thermal burns.**Poisons Schedule (SUSMP)** None allocated**3. COMPOSITION/INFORMATION ON INGREDIENTS****Mixture**

Chemical nature Hot aqueous solution with not more than 0.2% combustible material and containing at least 7% water. Maximum content of chloride ions < 0.02%.

Chemical name	CAS No.	Weight-%
Ammonium nitrate	6484-52-2	>80%-<=93%
Water	7732-18-5	7-19%
Buffering agents	-	<10%
Organics	-	<0.2%
Chlorine compounds	-	<0.02%

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.

CAUTION: the material is very hot (130°C maximum) so has the potential to cause severe thermal burns. Urgent hospital treatment is likely to be needed. Show this safety data sheet to the doctor in attendance.

Inhalation	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. 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. Remove clothing if contaminated and wash skin. Contact with molten materials requires immediate medical assistance.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. Contact with product at elevated temperatures can result in thermal burns. For skin burns, cool skin area with rapidly with cold water. Nitrates can be absorbed through cut, burnt or broken skin. Call a physician if symptoms occur. For severe burns, immediate medical attention is required.
Ingestion	Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/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. See section 8 for more information.

Most important symptoms and effects, both acute and delayed

Symptoms	Irritation. May cause redness and tearing of the eyes. Contact with hot material can cause thermal burns. Nitrates can be absorbed through cut, burnt or broken skin.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	<p>Hot material can cause severe thermal and chemical burns due to temperature and oxidising properties. Treat initially as for scalds. Delayed shock is a possibility. This material contains up to 93% ammonium nitrate which can be absorbed through burnt skin. If exposure is suspected treat as outlined below.</p> <p>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.</p> <p>Treatment:</p> <ol style="list-style-type: none">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
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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.

8. Following inhalation of oxides of nitrogen the patient should be observed in hospital 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. Ammonia. Nitric acid. Ammonium nitrate fumes.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Caution - material can be very hot. Oxidizer. Increases intensity of a fire.

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. Fires to be fought from a protected location.

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. Evacuate personnel to safe areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid contact with skin, eyes, and clothing. Use personal protective equipment as required. Wash thoroughly after handling. Caution: material can be very hot and contact may result in thermal burns.

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.

Environmental precautions

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. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Never return spill or leaks to original containers for re-use. Wash area down with excess water. Ensure that contaminated material (clothing, pallets) is thoroughly washed.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on safe handling Hot ammonium nitrate liquid can cause severe burns due to its temperature and the oxidising properties of ammonium nitrate. Avoid skin and eye contact and breathing in vapour, mists and aerosols. A significant risk of exposure exists when clearing blocked lines or valves. Extreme care should be taken in this situation to avoid contact with the material. Handle in accordance with good industrial hygiene and safety practice. Handle with care. Ensure adequate ventilation. Use personal protection equipment. Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse. Keep out of reach of children. 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 compatible, insulated, heated, bunded tank away from combustible materials. Australian Standard/New Zealand Standard AS/NZS 4326 (2008) provides further guidance on storage. Store away from incompatible materials described in Section 10.

Incompatible materials Incompatible with reducing agents. Incompatible with combustible materials. Incompatible with strong acids and bases. Incompatible with copper, zinc, brass and bronze.

Poisons Schedule (SUSMP) None allocated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits No value assigned for this specific material by Safe Work Australia. However, Workplace Exposure Standard(s) for possible constituents of vapour:

Ammonia: 8hr TWA = 17 mg/m³ (25 ppm), 15 min STEL = 24 mg/m³ (35 ppm)

Nitric acid: 8hr TWA = 5.2 mg/m³ (2 ppm), 15 min STEL = 10 mg/m³ (4 ppm)

Nitrogen dioxide: 8hr TWA = 5.6 mg/m³ (3 ppm), 15 min STEL = 9.4 mg/m³ (5 ppm)

Nitrous oxide (Dinitrogen monoxide): 8hr TWA = 45 mg/m³ (25 ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

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 Ensure that eyewash stations and safety showers are close to the workstation location. 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, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.

NOTE: Chemical goggles and face shield are not required if wearing an air-supplied mask.





Eye/face protection	Tight sealing safety goggles. If splashes are likely to occur: Face protection shield.
Skin and body protection	Rubber boots. Chemical resistant apron. Splash apron or equivalent chemical impervious outer garment. Impervious clothing. Heat resistant overalls.
Hand protection	Elbow-length impervious gloves.
Respiratory protection	If determined by a risk assessment an inhalation risk exists, wear an air supplied respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Environmental exposure controls	No information available.
Thermal hazards	Caution - material can be very hot.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Hot (130°C max.) Liquid
Appearance	Clear
Color	Colourless
Odor	Depending on pH, material can have irritating odour of ammonia (high pH) or nitric acid (low pH).
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5-7	
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	No data available	
Boiling point / boiling range	No data available	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	No data available	None known
Vapor density	No data available	None known
Relative density	1.35	
Water solubility	Miscible 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	No data available	
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity Oxidizer.

Chemical stability

Stability Ammonium nitrate is a powerful oxidising agent. When heated to decomposition (unconfined) it 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 of nitrogen dioxide. When molten may decompose violently due to shock or pressure.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

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.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid

Conditions to avoid Incompatible materials. Avoid contact with combustible substances.

Incompatible materials

Incompatible materials Incompatible with reducing agents. Incompatible with combustible materials. Incompatible with strong acids and bases. Incompatible with copper, zinc, brass and bronze.

Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides. Ammonia. Nitric acid. Ammonium nitrate fumes.

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 Vapour and processing fumes may cause irritation to mucous membranes of the respiratory tract, headache and nausea. May cause shortness of breath, severe headaches and lung effects. Inhalation of hot vapours may result in thermal burns to the respiratory tract.

Eye contact Causes serious eye irritation. Contact with the hot material can result in pain, thermal burns, and permanent injury.

Skin contact	May cause irritation. Nitrates can be absorbed through cut, burnt or broken skin. Contact with the hot material can result in pain, thermal burns, and permanent injury.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause a lowering of blood pressure (hypotension). Contact with hot material can cause thermal burns.
Symptoms	Contact with hot material can cause thermal burns. Irritation. May cause redness and tearing of the eyes.

Numerical measures of toxicity - Product Information

Refer to component information below.

Component Information

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. Classification is based on mixture calculation methods based on component data.
Respiratory or skin sensitization	No information available.
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:	Following the ingestion of nitrates in humans and animals methaemoglobinaemia has occurred. 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.
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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.

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation Not expected to bioaccumulate.

Mobility

Mobility in soil No information available.

Other adverse effects

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation. Allow material to cool and solidify.

Contaminated packaging Empty containers must be tripled rinsed prior to 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

ADG

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN number	2426
Proper shipping name	HOT AMMONIUM NITRATE, LIQUID
Hazard class	5.1
Packing group	III
Hazchem code	1Y

IATA

TRANSPORT PROHIBITED under the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air in Passenger and Cargo Aircraft, and Cargo Aircraft Only.

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number	2426
UN proper shipping name	HOT AMMONIUM NITRATE, LIQUID
Transport hazard class(es)	5.1
Packing group	III
IMDG EMS Fire	F-H
IMDG EMS Spill	S-Q
Marine pollutant	No

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Australia

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Poisons Schedule (SUSMP) None allocated

Major hazard (accident/incident planning) regulation

Verify that license requirements are met

Hazardous chemical

Oxidizing material listed in Appendix A to the ADG Code

Threshold quantity (T)

50

International Inventories

AiIC

All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

NZIoC

All the constituents of this material are listed on the New Zealand Inventory of Chemicals.

Legend:

AiIC AiIC- Australian Inventory of Industrial Chemicals

NZIoC - New Zealand Inventory of 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

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

Issuing Date: 14-Jun-2023

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

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

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