

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name:** UREA AMMONIUM NITRATE SOLUTION

**Recommended Use of the Chemical and Restrictions on Use** Fertilizer.

**Supplier:** Ixom Operations Pty Ltd (Incorporated in Australia)  
**NZBN:** 9429041465226  
**Street Address:** 166 Totara Street  
Mt Maunganui South  
New Zealand

**Telephone Number:** +64 9 368 2700  
**Facsimile:** +64 9 368 2710  
**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

Not classified as a Dangerous Good under NZS 5433:2012 Transport of Dangerous Goods on Land.

Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

**SIGNAL WORD:** WARNING

**Subclasses:**

Subclass 6.1 Category E - Substances which are acutely toxic.  
Subclass 6.3 Category B - Substances that are mildly irritating to the skin.  
Subclass 6.4 Category A - Substances that are irritating to the eye.

Fertilisers (Subsidiary Hazard) Group Standard 2006  
Approval Number: HSR002571



**Hazard Statement(s):**

H303 May be harmful if swallowed.  
H316 Causes mild skin irritation.  
H319 Causes serious eye irritation.

**Precautionary Statement(s):**

**Prevention:**

P102 Keep out of reach of children.  
P103 Read label before use.  
P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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**Response:**

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

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

**Storage:**

No storage statements.

**Disposal:**

P501 In case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided.

## 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Ammonium nitrate	6484-52-2	30-60%	H272 H319
Urea	57-13-6	30-60%	-
Water	7732-18-5	10-<30%	-
Ammonia	7664-41-7	<=0.1%	H221 H331 H314 H335 H400

## 4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

**Inhalation:**

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

**Skin Contact:**

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If swelling, redness, blistering or irritation occurs seek medical assistance. Nitrates can be absorbed through cut, burnt or broken skin.

**Eye Contact:**

If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes.

**Ingestion:**

Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Seek medical advice.

**Indication of immediate medical attention and special treatment needed:**

May cause methemoglobinemia. Contains ammonium nitrate which can be absorbed through cut, broken or burnt skin. If exposure is suspected treat as for exposure to nitrates, as outlined below. 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 (ie. ferric iron).

Symptoms such as headache, dizziness, weakness and dyspnoea occur when methaemoglobin 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 methaemoglobin in 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 to 2 mg/kg body weight in a 1% solution by slow intravenous injection. If cyanosis has not 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.
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:**

Not combustible, however, if material is involved in a fire use: Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

**Specific hazards arising from the chemical:**

Non-combustible material. Decomposes on heating emitting irritating white fumes and/or brown fumes. Brown fumes indicate the presence of toxic oxides of nitrogen. When water evaporates from this product, residues may contain ammonium nitrate and urea. Solid ammonium nitrate when sensitized during decomposition, may become unstable and explosive.

**Special protective equipment and precautions for fire-fighters:**

Not combustible, however will support the combustion of other materials. May increase intensity of fire. Fire-fighters to wear self-contained breathing apparatus and suitable protective clothing if there is a risk of exposure to products of combustion/decomposition. Fires should be fought from a protected location. Keep containers and adjacent areas cool with water spray. If safe to do so, remove containers from path of fire. A major fire may involve a risk of explosion. An adjacent detonation may also involve the risk of explosion.

## 6. ACCIDENTAL RELEASE MEASURES

**Emergency procedures/Environmental precautions:**

Wear protective equipment to prevent skin and eye contact. Shut off all possible sources of ignition. If contamination of sewers or waterways has occurred advise local emergency services.

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## **Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:**

Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). DO NOT use combustible material. Collect and seal in properly labelled containers or drums for disposal. Ensure that contaminated material (clothing, pallets) is thoroughly washed. Wash area down with excess water.

## **7. HANDLING AND STORAGE**

**Precautions for safe handling:** Avoid skin and eye contact. Keep out of reach of children. Wash hands thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Store in a cool, dry, well ventilated place. Do not allow material to dry out. Store away from incompatible materials described in Section 10. Do not store in copper or copper alloy containers. Do not store in zinc containers. Keep containers closed when not in use - check regularly for leaks.

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Workplace Exposure Standards:** No value assigned for this specific material by the New Zealand Workplace Health & Safety Authority. However, Workplace Exposure Standard(s) for constituent(s):

Ammonia: WES-TWA 25 ppm, 17 mg/m<sup>3</sup>; WES-STEL 35 ppm, 24 mg/m<sup>3</sup>

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.

WES - STEL (Workplace Exposure Standard - Short Term Exposure Limits) - The 15 minute average exposure standard. Applies to any 15 minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both short-term and eight-hour, time-weighted average exposures should be determined.

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:**

Ensure ventilation is adequate and that air concentrations of components are controlled below quoted Workplace Exposure Standards. Keep containers closed when not in use.

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.

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## Individual protection measures, such as Personal Protective Equipment (PPE):

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.



Wear overalls, chemical goggles and impervious gloves. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. If determined by a risk assessment an inhalation risk exists, wear a suitable mist respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Slight Ammonia
<b>Solubility:</b>	Miscible with water.
<b>Specific Gravity:</b>	1.3
<b>Relative Vapour Density (air=1):</b>	Not available
<b>Vapour Pressure (20 °C):</b>	<0.0042 kgf/cm <sup>2</sup>
<b>Flash Point (°C):</b>	Not applicable
<b>Flammability Limits (%):</b>	Not applicable
<b>Autoignition Temperature (°C):</b>	Not available
<b>Boiling Point/Range (°C):</b>	>100
<b>pH:</b>	6-8

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Corrosive to copper and brass.
<b>Chemical stability:</b>	Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
<b>Possibility of hazardous reactions:</b>	Contact with alkaline materials may liberate ammonia. Hazardous polymerisation will not occur.
<b>Conditions to avoid:</b>	Avoid exposure to heat. Avoid evaporation of the product.
<b>Incompatible materials:</b>	Incompatible with strong oxidising agents , reducing agents , combustible materials , flammable materials .
<b>Hazardous decomposition products:</b>	Oxides of nitrogen. Ammonia. Oxygen, which will support combustion.

## 11. TOXICOLOGICAL INFORMATION

Product Name: UREA AMMONIUM NITRATE SOLUTION  
Substance No: 00000050287

Issued: 26/04/2017  
Version: 3

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No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

- Ingestion:** Swallowing can result in nausea, vomiting, diarrhoea, and abdominal pain. Swallowing large amounts may result in headaches, dizziness and a reduction in blood pressure (hypotension).
- Eye contact:** An eye irritant.
- Skin contact:** Contact with skin will result in mild irritation. The ammonium nitrate component of this material can be absorbed through burnt, cut or broken skin with resultant adverse effects.
- Inhalation:** Breathing in vapour, mists or aerosols may produce respiratory irritation.
- 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.

**Acute toxicity:**

Oral LD50 (rat): >2000 mg/kg

**Chronic effects:** Chronic exposure may result in adverse effects on the blood and kidneys.

Following the ingestion of nitrates in humans and animals methaemoglobinaemia has occurred. nitrates in drinking water may cause serious illness and death. Infants are most susceptible to nitrate toxicity. "Blue Baby Syndrome" can occur when the infant's conversion of nitrate to nitrite interferes with the oxygen-carrying capacity of the blood. Symptoms of Blue baby Syndrome include, but may not be limited to, shortness of breath and bluish coloured skin.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity** Avoid contaminating waterways.

96hr LC50 (rainbow trout): >103 mg/L  
96hr LC50 (fathead minnow): 100-500 mg/L

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:**

Refer to local government authority for disposal recommendations. Dispose of contents/container in accordance with local/regional/national/international regulations.

## 14. TRANSPORT INFORMATION

**Road and Rail Transport**

Not classified as a Dangerous Good under NZS 5433:2012 Transport of Dangerous Goods on Land.

**Marine Transport**

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

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## **Air Transport**

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

## **15. REGULATORY INFORMATION**

### **Classification:**

Classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001.

### **Subclasses:**

Subclass 6.1 Category E - Substances which are acutely toxic.

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Subclass 6.4 Category A - Substances that are irritating to the eye.

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Approval Number: HSR002571

### **Hazard Statement(s):**

H303 May be harmful if swallowed.

H316 Causes mild skin irritation.

H319 Causes serious eye irritation.

## **16. OTHER INFORMATION**

Supplier Safety Data Sheet; 07/ 2016.

This safety data sheet has been prepared by Ixom Operations Pty Ltd Toxicology & SDS Services.

### **Reason(s) for Issue:**

Revised Primary SDS

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 Ixom Operations Pty Ltd 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 Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

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