Section 1: SUBSTANCE IDENTIFICATION AND SUPPLIER

<table>
<thead>
<tr>
<th>Product name</th>
<th>AMMONIUM NITRATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Names:</td>
<td>Nitric acid ammonium salt; Nitram; Nitropril; CPAN;</td>
</tr>
<tr>
<td></td>
<td>Chemically Pure Ammonium Nitrate; Security Sensitive</td>
</tr>
<tr>
<td></td>
<td>Ammonium Nitrate; SSAN.</td>
</tr>
<tr>
<td>Chemical formula:</td>
<td>(NH4)(NO3)</td>
</tr>
<tr>
<td>Recommended Use:</td>
<td>General chemical; explosives manufacture; fertilizer.</td>
</tr>
<tr>
<td></td>
<td>Various government controls may apply to this material</td>
</tr>
<tr>
<td>Company Identification:</td>
<td>Kemcore International Limited</td>
</tr>
<tr>
<td>Address:</td>
<td>133 CONNAUGHT RD</td>
</tr>
<tr>
<td></td>
<td>UNIT 703 ALLIANCE COMM BLDG, HONGKONG</td>
</tr>
<tr>
<td>Customer Centre:</td>
<td>Kemcore International Limited</td>
</tr>
</tbody>
</table>

Section 2: HAZARD IDENTIFICATION

Section 3: Composition Information

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>CAS No.</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>6484-52-2</td>
<td>100%</td>
</tr>
</tbody>
</table>

Section 4: FIRST AID MEASURES

| 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. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice. |

Doc Rev: 1st issue                                             Page 1 of 8                                             Rev Date: 25/08/2014
Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek medical advice.

Skin Contact: If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice. Nitrates can be absorbed through cut, burnt or broken skin. Launder contaminated clothing before reuse.

Eye Contact: If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Medical Attention & Special treatment

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.

Section 5: FIREFIGHTING MEASURES

Hazards from combustion products: Oxidizing substance.

Combustion Products: Not applicable
### Extinguishing Media:

- Suitable Extinguishing Media: Not combustible, however, if material is water jets. Water spray (large quantities).
- Unsuitable Extinguishing Media: Dry agent (carbon dioxide, dry chemical powder).

### HAZCHEM Code:

- 1Z

### Section 6: ACCIDENTAL RELEASE MEASURES

#### Emergency procedures/Environmental precautions:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

#### Methods and materials for containment and cleaning up:

- Wear protective equipment to prevent skin and eye contact. Avoid breathing in dust. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers, bags or drums for disposal or re-use. (Loose fitting lids). DO NOT return spilled material to original container. Ensure that contaminated material (clothing, pallets) is thoroughly washed. This material is classified as Security Sensitive Ammonium Nitrate (SSAN). Spillage recovery needs to be appropriately documented and material accurately accounted for.

### Section 7: HANDLING AND STORAGE

#### Handling:

Avoid skin and eye contact and breathing in dust. Avoid handling which leads to dust formation.

#### Storage:

Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from sources of heat or ignition. Ammonium Nitrate is incompatible with, and must be stored away from, tetr atmos, dichloroisocyanuric acid, trichloroisocyanuric acid, any bromate, chlorate, chloride, hypochlorite or chloroisocyanurate or any inorganic nitrite. If using wooden pallets, these must be hardwood and periodically washed down with large amounts of water to remove all traces of the material. Keep containers closed when not in use - check regularly for spills. 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 to all ship holds.

**Other Information:**

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### Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Exposure Limits:</th>
<th>No value assigned for this specific material by the National Occupational Health and Safety Commission. However, Exposure Standard(s) for particulates:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dusts not otherwise classified: 8hr TWA = 10 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protective Equipment:</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES, DUST MASK.</td>
</tr>
</tbody>
</table>

| Engineering Controls: | Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Avoid generating and breathing in dusts. Use with local exhaust ventilation or while wearing dust mask. Keep containers closed when not in use |

| Hygiene Precautions: | Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. |

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### Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Crystalline Solid / Prills  
Colour: White  
Odour: Mild Ammoniacal  
Molecular Formula: NH₄NO₃
Solubility: Soluble in water.
Specific Gravity: 1.72 @20°C
Relative Vapour Density (air=1): Not available
Vapour Pressure (20 °C): Negligible
Flash Point (°C): Not applicable
Flammability Limits (%): Not applicable
Autoignition Temperature (°C): Not available
Melting Point/Range (°C): 170
Boiling Point/Range (°C): Decomposes
Decomposition Point (°C): 210
pH: 5.4 (0.1M aq. solution)

Section 10: STABILITY AND REACTIVITY

Chemical Stability: Powerful oxidising agent. May explode under confinement and high temperature, but not readily detonated. Hygroscopic: absorbs moisture or water from surrounding air.


Conditions to Avoid: Avoid exposure to heat, sources of ignition, and open flame. Will react with organic materials and reducing agents. Avoid contact with combustible substances. Avoid contact with other chemicals. Avoid dust generation

Incompatible materials: Ammonium nitrate is a powerful oxidising agent. It is incompatible with tetranitromethane, dichloroisocyanuric acid, trichloroisocyanuric acid, any bromate, chlorate, chloride, hypochlorite, perchlorate, chloroisocyanurate, any inorganic nitrite, and metal powders. Incompatible with permanganates, and combustible materials.

Hazardous reactions: Oxidising 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 and metal powders. 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. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. Hazardous polymerisation will not occur.

Section 11: TOXICOLOGICAL INFORMATION

ERMA Classification:

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).
**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.

**Skin Contact:**
Repeated or prolonged skin contact may lead to irritation. Contact with molten material may cause skin burns. See effects as noted under 'Inhalation'. Can be absorbed through the skin with resultant adverse effects.

**Eye Contact:**
May be an eye irritant. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.

**Chronic Effects:**
Available evidence from animal studies indicate that repeated or prolonged exposure to this material could result in effects on the blood. Under certain circumstances nitrosamines can form in contact with nitrosating agents. Some nitrosamines were found to cause cancer in animal experiments.

**Other Information:**
No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label.

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### Section 12: ECOLOGICAL INFORMATION

**ERMA Classification:**

**Ecotoxicity:**
Avoid contaminating waterways

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.

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### Section 13: DISPOSAL INFORMATION

**Disposal methods:**
Refer to Waste Management Authority. Dispose of material through a licensed waste contractor. Dispose of material through a licensed waste contractor. Empty containers must be decontaminated by rinsing thoroughly with water. Rinsing water needs to be disposed of carefully. Disposal of material needs to be appropriately documented and material accurately accounted for.
### Container Disposal:

<table>
<thead>
<tr>
<th>Section 14: TRANSPORT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN Number:</strong> 1942</td>
</tr>
<tr>
<td><strong>Transport Hazard Class:</strong> 5.1 Oxidizing Agent</td>
</tr>
<tr>
<td><strong>UN Packing Group:</strong> III</td>
</tr>
<tr>
<td><strong>Proper Shipping Name or Technical Name:</strong> AMMONIUM NITRATE</td>
</tr>
</tbody>
</table>

**Marine Transport**

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

- UN No: 1942
- Class-primary: 5.1 Oxidizing Agent
- Packing Group: III
- Proper Shipping Name: AMMONIUM NITRATE
- IMDG EMS Fire: F-H
- IMDG EMS Spill: S-Q

**Air Transport**

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

- UN No: 1942
- Class-primary: 5.1 Oxidizing Agent
- Packing Group: III
- Proper Shipping Name: AMMONIUM NITRATE

### Section 15: REGULATORY INFORMATION

**Classification:**

This material is not classified as hazardous; NON-HAZARDOUS SUBSTANCE.

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

Poisons Schedule: None allocated.

Section 16: OTHER INFORMATION
Supplier Safety Data Sheet; 08/2014.
Toxicity Profile - Nitrites (Sodium and Potassium) British Industrial Biological Research Association (BIBRA).

This safety data sheet has been prepared by Kemcore.

Reason(s) for Issue: 1st issue

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 Kemcore 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 Kemcore at the contact details on page 1.

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