SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Manufacturing Nitrogen Solution

Synonyms: ANA-440 (24-70-0) Ammonia - Ammonium Nitrate, ANA-448 (25-69-0) Ammonia - Ammonium Nitrate

Intended Use of the Product: Not available

Name, Address, and Telephone of the Responsible Party

Company
Cherokee Nitrogen L.L.C.
1080 Industrial Drive
Cherokee, AL 35616
T (256) 359-7000 – F (256) 359-4450

Emergency Telephone Number

Emergency number: (256) 359-7000, (800) 424-9300 (CHEMTREC, 24 hours)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)
Ox. Liq. 3 H272
Skin Corr. 1B H314
Eye Dam. 1 H318
STOT SE 3 H335
Aquatic Acute 1 H400
Aquatic Chronic 2 H411

Label Elements

GHS-US Labeling
Hazard Pictograms (GHS-US)

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US)

H272 - May intensify fire; oxidizer
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements (GHS-US)

P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking.
P220 - Keep/Store away from combustible materials, clothing, incompatible materials.
P221 - Take any precaution to avoid mixing with combustibles, organic material, clothing, incompatible materials.
P260 - Do not breathe vapors, mist, spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, respiratory protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Manufacturing Nitrogen Solution

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P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P312 - Call a POISON CENTER/doctor/physician if you feel unwell.
P321 - Specific treatment (see section 4).
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use appropriate media for extinction.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. May decompose to ammonia, hydrogen, nitrogen oxide and nitrogen at temperatures above 301.67°C (575°F).

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Name</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ammonium nitrate</td>
<td>(CAS No) 6484-52-2</td>
<td>69 - 70</td>
<td>Ox. Sol. 3, H272</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td></td>
<td>Ammonia</td>
<td>(CAS No) 7664-41-7</td>
<td>24 - 25</td>
<td>Flam. Gas 2, H221</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Compressed gas, H280</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox. 3 (Inhalation:gas), H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aquatic Chronic 2, H411</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>(CAS No) 7732-18-5</td>
<td>6</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Get immediate medical advice/attention.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately.

Ingestion: Rinse mouth. Do NOT induce vomiting. Seek medical attention immediately.

Most Important Symptoms and Effects Both Acute and Delayed

General: Corrosive. Causes burns. Causes serious eye damage. May cause respiratory irritation.

Inhalation: Inhalation may cause immediate severe irritation progressing quickly to chemical burns.

Skin Contact: Contact may cause immediate severe irritation progressing quickly to chemical burns.

Eye Contact: Causes serious eye damage.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Not available
Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. Hot Ammonium Nitrate burns skin, allowing rapid absorption of Ammonium Nitrate through the skin and toxic effects can occur quite rapidly. Causes methemoglobinemia – emergency response should treat appropriately.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray.

Unsuitable Extinguishing Media: Dry chemical, carbon dioxide, or regular foam.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: May intensify fire; oxidizer. Will burn if exposed to heat, and in addition, will accelerate the burning of other combustibles, resulting in more rapid spread of fire.

Explosion Hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Smothering, contact with organic material, or combustible material may cause an explosive situation.

Reactivity: May cause or intensify fire; oxidizer. May accelerate the burning of other combustible materials. Smothering, contact with organic material, or combustible material may cause an explosive situation.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Nitrogen oxides. Toxic fumes are released. Ammonia.

Other information: Do not add water to molten material as this may cause spattering. Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Handle in accordance with good industrial hygiene and safety practice. Avoid breathing (vapors, mist, spray). Do not get in eyes, on skin, or on clothing. Keep away from combustible material.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).


For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container. Contact competent authorities after a spill. Do not take up in combustible material such as: saw dust or cellulosic material.

Reference to Other Sections

See section 8, Exposure Controls and Personal Protection.
SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: When heated to decomposition, emits toxic fumes. Smothering, contact with organic material, or combustible material may cause an explosive situation. Do not puncture or incinerate container. May decompose to ammonia, hydrogen, nitrogen oxide and nitrogen at temperatures above 301.7 °C (575°F).

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep in fireproof place. Keep/Store away from combustible materials, extremely high or low temperatures, direct sunlight, ignition sources, incompatible materials. Storage should be designed for the safe release of pressure. Floor drains and recessed areas should be plugged or eliminated to prevent entrapment of solution.


Specific End Use(s) Not available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

<table>
<thead>
<tr>
<th>Ammonia (7664-41-7)</th>
<th>Mexico OEL TWA (mg/m³)</th>
<th>18 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico OEL TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Mexico OEL STEL (mg/m³)</td>
<td>27 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Mexico OEL STEL (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>USA ACGIH ACGIH TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>USA ACGIH ACGIH STEL (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>USA OSHA OSHA PEL (TWA) (mg/m³)</td>
<td>35 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA OSHA OSHA PEL (TWA) (ppm)</td>
<td>50 ppm</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (TWA) (mg/m³)</td>
<td>18 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (TWA) (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (STEL) (mg/m³)</td>
<td>27 mg/m³</td>
<td></td>
</tr>
<tr>
<td>USA NIOSH NIOSH REL (STEL) (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>USA IDLH US IDLH (ppm)</td>
<td>300 ppm</td>
<td></td>
</tr>
<tr>
<td>Alberta OEL STEL (mg/m³)</td>
<td>24 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Alberta OEL STEL (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>Alberta OEL TWA (mg/m³)</td>
<td>17 mg/m³</td>
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</tr>
<tr>
<td>Alberta OEL TWA (ppm)</td>
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<tr>
<td>British Columbia OEL STEL (ppm)</td>
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</tr>
<tr>
<td>British Columbia OEL TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Manitoba OEL STEL (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>Manitoba OEL TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>New Brunswick OEL STEL (mg/m³)</td>
<td>24 mg/m³</td>
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</tr>
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<td>New Brunswick OEL STEL (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>New Brunswick OEL TWA (mg/m³)</td>
<td>17 mg/m³</td>
<td></td>
</tr>
<tr>
<td>New Brunswick OEL TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador OEL STEL (ppm)</td>
<td>35 ppm</td>
<td></td>
</tr>
<tr>
<td>Newfoundland &amp; Labrador OEL TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Nova Scotia OEL STEL (ppm)</td>
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<td></td>
</tr>
<tr>
<td>Nova Scotia OEL TWA (ppm)</td>
<td>25 ppm</td>
<td></td>
</tr>
<tr>
<td>Nunavut OEL STEL (mg/m³)</td>
<td>24 mg/m³</td>
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<tr>
<td>Nunavut OEL STEL (ppm)</td>
<td>35 ppm</td>
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</tr>
</tbody>
</table>
# Manufacturing Nitrogen Solution

## Safety Data Sheet


<table>
<thead>
<tr>
<th>Region</th>
<th>OEL STEL (mg/m³)</th>
<th>OEL STEL (ppm)</th>
<th>OEL TWA (mg/m³)</th>
<th>OEL TWA (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nunavut</td>
<td>17 mg/m³</td>
<td>25 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>24 mg/m³</td>
<td>35 ppm</td>
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<td></td>
</tr>
<tr>
<td>Northwest Territories</td>
<td>25 ppm</td>
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<td></td>
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</tr>
<tr>
<td>Ontario</td>
<td>25 ppm</td>
<td></td>
<td></td>
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<tr>
<td>Prince Edward Island</td>
<td>35 ppm</td>
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<td></td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>25 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Québec</td>
<td>24 mg/m³</td>
<td>35 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Québec</td>
<td>17 mg/m³</td>
<td>25 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>35 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yukon</td>
<td>30 mg/m³</td>
<td>40 ppm</td>
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<td></td>
</tr>
<tr>
<td>Yukon</td>
<td>18 mg/m³</td>
<td>25 ppm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Exposure Controls

### Appropriate Engineering Controls:
Ensure all national/local regulations are observed. Ensure adequate ventilation, especially in confined areas. Use explosion-proof equipment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

### Personal Protective Equipment:

### Materials for Protective Clothing:
Chemically resistant materials and fabrics.

### Hand Protection:
Wear chemically resistant protective gloves.

### Eye Protection:
Chemical goggles.

### Skin and Body Protection:
Neoprene, nitrile or PVC gloves and protective clothing recommended.

### Respiratory Protection:
Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of vapor or mist are expected to exceed exposure limits.

### Other Information:
When using, do not eat, drink or smoke.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

- **Physical State**: Liquid
- **Appearance**: Clear
- **Odor**: Trace odor of ammonia.
- **Odor Threshold**: Not available
- **pH**: 12
- **Relative Evaporation Rate (butylacetate=1)**: Not available
- **Melting Point**: Not available
- **Freezing Point**: Not available
- **Boiling Point**: Not available
- **Flash Point**: Not available
- **Auto-ignition Temperature**: Not available
- **Decomposition Temperature**: 301.7 °C (575°F)
- **Flammability (solid, gas)**: Not available
- **Lower Flammable Limit**: 16 % (Ammonia Vapor)
- **Upper Flammable Limit**: 25 % (Ammonia Vapor)
- **Vapor Pressure**: 17 psig@ 40°C (104°F)
- **Relative Vapor Density at 20 °C**: 0.6 (Air = 1)
- **Relative Density**: Not available
- **Specific Gravity**: 1.12 - 1.15 @15.6°C (60°F)
- **Solubility**: Complete.
- **Viscosity**: Not available
- **Explosion Data – Sensitivity to Mechanical Impact**: Not available
- **Explosion Data – Sensitivity to Static Discharge**: Not available

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity**: May cause or intensify fire; oxidizer. May accelerate the burning of other combustible materials. Smothering, contact with organic material, or combustible material may cause an explosive situation.
- **Chemical Stability**: May intensify fire; oxidizer.
- **Possibility of Hazardous Reactions**: Hazardous polymerization will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

- **Acute Toxicity**: Not classified
- **LD50 and LC50 Data**: Not available
- **Skin Corrosion/Irritation**: Causes severe skin burns and eye damage. **pH**: 12
- **Serious Eye Damage/Irritation**: Causes serious eye damage. **pH**: 12
- **Respiratory or Skin Sensitization**: Not classified
- **Germ Cell Mutagenicity**: Not classified
- **Teratogenicity**: Not available
- **Carcinogenicity**: Not classified
- **Specific Target Organ Toxicity (Repeated Exposure)**: Not classified
- **Reproductive Toxicity**: Not classified
- **Specific Target Organ Toxicity (Single Exposure)**: May cause respiratory irritation.
Manufacturing Nitrogen Solution

Safety Data Sheet

**Aspiration Hazard**: Not classified

**Symptoms/Injuries After Inhalation**: Inhalation may cause immediate severe irritation progressing quickly to chemical burns.

**Symptoms/Injuries After Skin Contact**: Contact may cause immediate severe irritation progressing quickly to chemical burns.

**Symptoms/Injuries After Eye Contact**: Causes serious eye damage.

**Symptoms/Injuries After Ingestion**: Ingestion is likely to be harmful or have adverse effects.

**Information on Toxicological Effects - Ingredient(s)**

**LD50 and LC50 Data**:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>LD50 Oral Rat</th>
<th>LC50 Inhalation Rat (mg/l)</th>
<th>LC50 Inhalation Rat (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water (7732-18-5)</td>
<td>&gt; 90000 mg/kg</td>
<td>&gt; 88.8 mg/l/4h</td>
<td></td>
</tr>
<tr>
<td>Ammonium nitrate (6484-52-2)</td>
<td>2217 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammonia (7664-41-7)</td>
<td>350 mg/kg</td>
<td>5.1 mg/l (Exposure time: 1 h)</td>
<td>2000 ppm/4h (Exposure time: 4 h)</td>
</tr>
</tbody>
</table>

**SECTION 12: ECOLOGICAL INFORMATION**

**Toxicity**

**Ecology - General**: Very toxic to aquatic life with long lasting effects.

**Ammonia (7664-41-7)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Concentration and Exposure Time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 Fish 1</td>
<td>0.44 mg/l (Exposure time: 96 h)</td>
<td>Cyprinus carpio</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>25.4 mg/l (Exposure time: 48 h)</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>LC50 Fish 2</td>
<td>0.26 - 4.6 mg/l (Exposure time: 96 h)</td>
<td>Lepomis macrochirus</td>
</tr>
</tbody>
</table>

**Persistence and Degradability**

**Manufacturing Nitrogen Solution**

*May cause long-term adverse effects in the environment.*

**Bioaccumulative Potential**

**Manufacturing Nitrogen Solution**

*Not established.*

**Ammonium nitrate (6484-52-2)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Concentration and Exposure Time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>(no bioaccumulation expected)</td>
<td></td>
</tr>
<tr>
<td>Log Pow</td>
<td>-3.1 (at 25 °C)</td>
<td></td>
</tr>
</tbody>
</table>

**Ammonia (7664-41-7)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Concentration and Exposure Time</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-1.14 (at 25 °C)</td>
<td></td>
</tr>
</tbody>
</table>

**Mobility in Soil**: Not available

**Other Adverse Effects**

**Other Information**: Avoid release to the environment.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste Disposal Recommendations**: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information**: Clean up even minor leaks or spills if possible without unnecessary risk.
MANUFACTURING NITROGEN SOLUTION

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SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name: CORROSION LIQUIDS, N.O.S. (contains ammonia and ammonium nitrate)

Hazard Class: 8

Identification Number: UN1760

Label Codes: 8

Packing Group: III

Marine Pollutant: Marine pollutant

ERG Number: 140

14.2 In Accordance with IMDG

Proper Shipping Name: CORROSION LIQUID, N.O.S. (contains ammonia and ammonium nitrate)

Hazard Class: 8

Identification Number: UN1760

Packing Group: III

Label Codes: 8

EmS-No. (Fire): F-A

EmS-No. (Spillage): S-B

Marine pollutant: Marine pollutant

14.3 In Accordance with IATA

Proper Shipping Name: CORROSION LIQUID, N.O.S. (contains ammonia and ammonium nitrate)

Packing Group: III

Hazard Class: 8

Identification Number: UN1760

Label Codes: 8

ERG Code (IATA): 8L

14.4 In Accordance with TDG

Proper Shipping Name: CORROSION LIQUID, N.O.S. (contains ammonia and ammonium nitrate)

Packing Group: III

Hazard Class: 8

Identification Number: UN1760

Label Codes: 8

Marine Pollutant (TDG): Marine pollutant

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

<table>
<thead>
<tr>
<th>Manufacturing Nitrogen Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>SARA Section 311/312 Hazard Classes</td>
</tr>
<tr>
<td>Reactiv hazard</td>
</tr>
</tbody>
</table>

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ammonium nitrate (6484-52-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ammonia (7664-41-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on SARA Section 302 (Specific toxic chemical listings)

Listed on SARA Section 313 (Specific toxic chemical listings)

SARA Section 302 Threshold Planning Quantity (TPQ) 500

SARA Section 311/312 Hazard Classes

| Fire hazard |
| Immediate (acute) health hazard |
### Manufacturing Nitrogen Solution

**Safety Data Sheet**


<table>
<thead>
<tr>
<th>SARA Section 313 - Emission Reporting</th>
<th>Sudden release of pressure hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.0 % (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)</td>
</tr>
</tbody>
</table>

#### US State Regulations

**Ammonium nitrate (6484-52-2)**

- U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
- U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
- U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
- U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
- RTK - U.S. - Massachusetts - Right To Know List
- RTK - U.S. - New Jersey - Right to Know Hazardous Substance List
- U.S. - New Jersey - Special Health Hazards Substances List
- RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
- RTK - U.S. - Pennsylvania - RTK (Right to Know) List
- U.S. - Texas - Effects Screening Levels - Long Term
- U.S. - Texas - Effects Screening Levels - Short Term

**Ammonia (7664-41-7)**

- U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute
- U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
- U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
- U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
- U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
- U.S. - Connecticut - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
- U.S. - Connecticut - Water Quality Standards - Acute Saltwater Aquatic Life Criteria
- U.S. - Connecticut - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
- U.S. - Connecticut - Water Quality Standards - Chronic Saltwater Aquatic Life Criteria
- U.S. - Delaware - Accidental Release Prevention Regulations - Sufficient Quantities
- U.S. - Delaware - Accidental Release Prevention Regulations - Threshold Quantities
- U.S. - Delaware - Accidental Release Prevention Regulations - Toxic Endpoints
- U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
- U.S. - Florida - Essential Chemicals List
- U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
- U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
- U.S. - Idaho - Occupational Exposure Limits - TWAs
- U.S. - Louisiana - Reportable Quantity List for Pollutants
- U.S. - Maine - Air Pollutants - Criteria Pollutants
- U.S. - Massachusetts - Allowable Ambient Limits (AALs)
- U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
- U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
- RTK - U.S. - Massachusetts - Right To Know List
- U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)
- U.S. - Massachusetts - Toxics Use Reduction Act
- U.S. - Michigan - Occupational Exposure Limits - STELs
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| U.S. - Minnesota - Chemicals of High Concern | U.S. - Minnesota - Hazardous Substance List |
| U.S. - Minnesota - Permissible Exposure Limits - STELs | U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour |
| U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual | U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances |
| U.S. - New Jersey - Environmental Hazardous Substances List | RTK - U.S. - New Jersey - Right to Know Hazardous Substance List |
| U.S. - New Jersey - Special Health Hazards Substances List | U.S. - New Mexico - Precursor Chemicals |
| U.S. - North Carolina - Control of Toxic Air Pollutants | U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour |
| U.S. - Ohio - Extremely Hazardous Substances - Threshold Quantities | U.S. - Oregon - Permissible Exposure Limits - TWAs |
| U.S. - Oregon - Precursor Chemicals | RTK - U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List |
| RTK - U.S. - Pennsylvania - RTK (Right to Know) List | U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour |
| U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour | U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual |
| U.S. - Tennessee - Occupational Exposure Limits - STELs | U.S. - Texas - Effects Screening Levels - Long Term |
| U.S. - Texas - Effects Screening Levels - Short Term | U.S. - Vermont - Permissible Exposure Limits - STELs |
| U.S. - Virginia - Water Quality Standards - Chronic Freshwater Aquatic Life | U.S. - Virginia - Water Quality Standards - Chronic Saltwater Aquatic Life |
| U.S. - Washington - Permissible Exposure Limits - STELs | U.S. - Washington - Permissible Exposure Limits - TWAs |
| U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet | U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet |
| U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater | U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet |

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U.S. - Alaska - Water Quality Standards - Chronic Aquatic Life Criteria for Marine Water
U.S. - Alaska - Ambient Air Quality Standards

### Canadian Regulations

<table>
<thead>
<tr>
<th>Manufacturing Nitrogen Solution</th>
<th>WHMIS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class C - Oxidizing Material</td>
</tr>
<tr>
<td></td>
<td>Class D Division 2 Subdivision B - Toxic material causing other toxic effects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water (7732-18-5)</th>
</tr>
</thead>
</table>
Listed on the Canadian DSL (Domestic Substances List) inventory.

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
</tr>
</thead>
</table>
Uncontrolled product according to WHMIS classification criteria

<table>
<thead>
<tr>
<th>Ammonium nitrate (6484-52-2)</th>
</tr>
</thead>
</table>
Listed on the Canadian DSL (Domestic Substances List) inventory.

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
</tr>
</thead>
</table>
Class C - Oxidizing Material |
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

<table>
<thead>
<tr>
<th>Ammonia (7664-41-7)</th>
</tr>
</thead>
</table>
Listed on the Canadian DSL (Domestic Substances List) inventory.
Listed on the Canadian Ingredient Disclosure List

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
</tr>
</thead>
</table>
Class A - Compressed Gas |
Class B Division 1 - Flammable Gas |
Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects |
Class E - Corrosive Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision date**: September 2018

**Other Information**: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**GHS Full Text Phrases**:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Inhalation:gas)</th>
<th>Acute toxicity (inhalation:gas) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 2</td>
</tr>
<tr>
<td>Compressed gas</td>
<td>Gases under pressure Compressed gas</td>
</tr>
<tr>
<td>Flam. Gas 2</td>
<td>Flammable gases Category 2</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Ox. Sol. 3</td>
<td>Oxidizing solids Category 3</td>
</tr>
<tr>
<td>Ox. Liq. 3</td>
<td>Oxidizing liquids Category 3</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation Category 1B</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H221</td>
<td>Flammable gas</td>
</tr>
<tr>
<td>H272</td>
<td>May intensify fire; oxidizer</td>
</tr>
<tr>
<td>H280</td>
<td>Contains gas under pressure; may explode if heated</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

**NFPA Health Hazard**: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

**NFPA Fire Hazard**: 1 - Must be preheated before ignition can occur.

**NFPA Reactivity**: 3 - Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation, or reacts explosively with water.

**NFPA Specific Hazard**: OX - This denotes an oxidizer, a chemical which can greatly increase the rate of combustion/fire.

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**Party Responsible for the Preparation of This Document**
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T (256) 359-7000

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

North America GHS US 2012 & WHMIS