Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution
Safety Data Sheet
According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015). Revision Date: 05/30/2018 Date of Issue: 05/31/2012 Supersedes Date: 03/28/2014 Version: 2.0

SECTION 1: IDENTIFICATION

Product Identifier
Product Name: Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution
Product Code: 1002

Intended Use of the Product
Use Of The Substance/Mixture: Fertilizer, Manufacture of Explosives.

Name, Address, and Telephone of the Responsible Party
Canada:
Orica Canada Inc.
301 Rue Hotel-de-Ville
Brownsburg-Chatham, QC
J8G 3B5
For SDS Requests: 1-855-26-ORICA (1-855-266-7422)
sds.na@orica.com
www.oricaminingservices.com

USA:
Orica USA Inc.
33101 E. Quincy Avenue
Watkins, CO 80137-9406
For SDS Requests: 1-855-26-ORICA (1-855-266-7422)
sds.na@orica.com

Mexico:
Orica Mexico Inc.
Boulevard Harold R. Pape No. 350
Colonia Telefonistas
Monclova, Coahuila.
C.P. 25758
For SDS Requests: 1-855-26-ORICA (1-855-266-7422)
sds.na@orica.com

Emergency Telephone Number
Emergency Number : Canada: 1-877-561-3636 (Orica Transportation Emergency Response)
USA: 1-800-424-9300 (CHEMTREC)
Mexico: 01-800- 002-1400

FOR CHEMICAL EMERGENCIES (24 HOUR) INVOLVING TRANSPORTATION, SPILL, LEAK, RELEASE, FIRE OR ACCIDENTS: IN CANADA CALL: THE ORICA TRANSPORTATION EMERGENCY RESPONSE SYSTEM AT 1-877-561-3636. IN THE U.S. CALL: CHEMTREC 1-800-424-9300. IN MEXICO CALL: 01-800- 002-1400. IN THE U.S.: FOR LOST, STOLEN, OR MISPLACED EXPLOSIVES CALL: BATF 1-800-800-3855. FORM ATF F 5400.5 MUST BE COMPLETED AND LOCAL AUTHORITIES (STATE/MUNICIPAL POLICE, ETC.) MUST BE ADVISED.

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture
GHS-US/CA Classification
Ox. Liq. 3 H272
Eye Irrit. 2A H319
Full text of hazard classes and H-statements : see section 16

Label Elements
GHS-US/CA Labeling
Hazard Pictograms (GHS-US/CA) : GHS03 GHS07
Signal Word (GHS-US/CA) : Warning
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution

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**Hazard Statements (GHS-US/CA)**
H272 - May intensify fire; oxidizer.
H319 - Causes serious eye irritation.

**Precautionary Statements (GHS-US/CA)**
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220 - Keep away from clothing and other combustible materials.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P280 - Wear protective gloves, protective clothing, and eye protection.
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.
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

**Other Hazards**
Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Overexposure may cause methemoglobinemia. Initial manifestation of methemoglobinemia is cyanosis, characterized by navy lips, tongue and mucous membranes, with skin color being slate grey. Further manifestation is characterized by headache, weakness, dyspnea, dizziness, stupor, respiratory distress and death due to anoxia.

**Unknown Acute Toxicity (GHS-US/CA)**
No data available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Mixture</th>
<th>Name</th>
<th>Product Identifier</th>
<th>% *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>(CAS-No.) 6484-52-2</td>
<td>80 - 90</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td>(CAS-No.) 7732-18-5</td>
<td>10 - 20</td>
<td></td>
</tr>
</tbody>
</table>

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

### 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. Obtain medical attention if irritation develops or persists.

**Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

**Most Important Symptoms and Effects Both Acute and Delayed**
**General:** Causes serious eye irritation. Contact with hot liquid may cause thermal burns. Overexposure to this material may result in methemoglobinemia. Methemoglobinemia decreases the blood's ability to carry oxygen and results in symptoms such as dizziness, drowsiness, headache, shortness of breath, blue skin and lips, rapid heart rate, unconsciousness, and possibly death.

**Inhalation:** Prolonged exposure may cause irritation.

**Skin Contact:** Prolonged exposure may cause skin irritation.

**Eye Contact:** Contact causes severe irritation with redness and swelling of the conjunctiva.

**Ingestion:** Ingestion may cause adverse effects.

**Chronic Symptoms:** None expected under normal conditions of use.

**Indication of Any Immediate Medical Attention and Special Treatment Needed**
If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.
SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.
Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture
Fire Hazard: May intensify fire; oxidizer.
Explosion Hazard: Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.
Reactivity: Oxidizer: increases the burning rate of combustible materials.

Advice for Firefighters
Precautionary Measures Fire: Exercise caution when fighting any chemical fire.
Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

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: Avoid breathing (vapor, mist, spray). Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Keep away from combustible material. Avoid all contact with skin, eyes, or clothing.

For Non-Emergency Personnel
Protective Equipment: Use appropriate personal protective equipment (PPE).

For Emergency Personnel
Protective Equipment: Equip cleanup crew with proper protection.
Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions
Prevent entry to sewers and public waters.

Methods and Materials for Containment and Cleaning Up
For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Use only non-sparking tools.
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. Do not take up in combustible material such as: saw dust or cellulosic material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections
See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling
Additional Hazards When Processed: May cause or intensify fire; oxidizer. Avoid heating TGAN (Technical Grade Ammonium Nitrate) in a confined space above 170 °C (338 °F). Processes involving TGAN should be designed to avoid this possibility. Avoid localized heating of TGAN, potentially leading to development of high temperature areas. Owner/operators should ensure that facilities have implemented a “hot work” program consistent with OSHA requirements at 29 CFR 1910.252.
Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid breathing vapors, mist, spray. Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. - No smoking. Avoid contact with skin, eyes and clothing.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution

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Technical Measures: Proper grounding procedures to avoid static electricity should be followed. All TGAN (Technical Grade Ammonium Nitrate) storage sites should comply with 29 CFR 1910.109(i). At sites where compliance with any provision is impracticable, the owner/operator should demonstrate that an equivalent level of safety is maintained through alternative means. The owner/operator must comply with applicable regulations promulgated by DHS at 6 CFR 27, and USCG at 33 CFR 105. The owner/operator should conduct a thorough site vulnerability assessment to identify gaps in TGAN security and develop and implement appropriate security control measures that will mitigate these security gaps. Considerations should be given to deter, to delay, to detect, and to respond to the identified potential security issues. Owner/operators of TGAN storage sites should ensure that facilities are in full compliance with applicable requirements of the Emergency Planning and Community Right to Know Act. 42 U.S.C. §§ 11001 – 11050.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep in fireproof place.

Incompatible Materials: Avoid contamination of TGAN with combustible materials or organic substances including but not limited to; (i) organic chemicals, acids, or other corrosive materials, (ii) compressed flammable gases, (iii) flammable and combustible materials, solids or liquids, and (iv) other contaminating substances such as wood chips, organic materials, chlorides, phosphorus, finely divided metals, charcoals, diesel fuels and oils, sulfur. Avoid contamination of TGAN with inorganic materials that may contribute to its sensitivity to explosion, including chlorides and some metals, such as chromium, copper, copper alloys such as brass or bronze, cobalt, and nickel, and finely divided or powdered metals.

Storage Temperature: < 210 °C (410 °F)

Special Rules on Packaging: Bins and structural materials/members in immediate contact with TGAN (Technical Grade Ammonium Nitrate) should be constructed of non-combustible materials. Bins and structural materials/members in immediate contact with TGAN (Technical Grade Ammonium Nitrate) should be constructed of non-combustible materials. Bins should be kept padlocked at all times, except to load or unload TGAN. The contents of each bin should be clearly identified by the proper shipping name of the material, “AMMONIUM NITRATE” written in 2-inch high, capital letters below the NFPA fire diamond.

Specific End Use(s)
Fertilizer, Manufacture of Explosives. Manufacture of Blasting Agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters
For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

<table>
<thead>
<tr>
<th>Ammonium nitrate (6484-52-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORICA Guideline</td>
</tr>
</tbody>
</table>

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases or vapors may be released. Proper grounding procedures to avoid static electricity should be followed.


Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution

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**Physical State**: Liquid  
**Appearance**: Opaque  
**Odor**: Mild Ammoniacal  
**Odor Threshold**: Not available  
**pH**: 5 - 6 (0.1M solution in water)  
**Evaporation Rate**: 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**: Not available  
**Flammability (solid, gas)**: Not applicable  
**Lower Flammable Limit**: Not available  
**Upper Flammable Limit**: Not available  
**Vapor Pressure**: Not available  
**Relative Vapor Density at 20°C**: Not available  
**Relative Density**: Not available  
**Density**: 1.3 - 1.38 g/ml  
**Specific Gravity**: Not available  
**Solubility**: Not available  
**Partition Coefficient: N-Octanol/Water**: Not available  
**Viscosity**: Not available  
**Oxidizing Properties**: Oxidizing liquid 3 - May intensify fire; oxidizer.

**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity**: Oxidizer: increases the burning rate of combustible materials.  
**Chemical Stability**: May intensify fire; oxidizer.  
**Possibility of Hazardous Reactions**: Hazardous polymerization will not occur.  
**Conditions to Avoid**: Direct sunlight, extremely high or low temperatures, ignition sources, combustible materials, incompatible materials.  
**Incompatible Materials**: Avoid contamination of TGAN with combustible materials or organic substances including but not limited to: (i) organic chemicals, acids, or other corrosive materials, (ii) compressed flammable gases, (iii) flammable and combustible materials, solids or liquids, and (iv) other contaminating substances such as wood chips, organic materials, chlorides, phosphorus, finely divided metals, charcoals, diesel fuels and oils, sulfur. Avoid contamination of TGAN with inorganic materials that may contribute to its sensitivity to explosion, including chlorides and some metals, such as chromium, copper, copper alloys such as brass or bronze, cobalt, and nickel, and finely divided or powdered metals.  
**Hazardous Decomposition Products**: Thermal decomposition generates toxic vapors.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**Information on Toxicological Effects - Product**

**Acute Toxicity (Oral)**: Not classified  
**Acute Toxicity (Dermal)**: Not classified  
**Acute Toxicity (Inhalation)**: Not classified  
**LD50 and LC50 Data**: Not available  
**Skin Corrosion/Irritation**: Not classified  
**pH**: 5 - 6 (0.1M solution in water)  
**Eye Damage/Irritation**: Causes serious eye irritation.**  
**pH**: 5 - 6 (0.1M solution in water)  
**Respiratory or Skin Sensitization**: Not classified  
**Germ Cell Mutagenicity**: Not classified  
**Carcinogenicity**: Not classified
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution

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Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.
Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.
Symptoms/Injuries After Eye Contact: Contact causes severe irritation with redness and swelling of the conjunctiva.
Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.
Chronic Symptoms: None expected under normal conditions of use.

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</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate (6484-52-2)</td>
<td>2217 mg/kg</td>
<td>&gt; 88.8 mg/l/4h</td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

Toxicity
Ecology - General: Not classified.

Ammonium nitrate (6484-52-2)

<table>
<thead>
<tr>
<th>Test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 Fish 1</td>
<td>542 mg/l</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>555 mg/l</td>
</tr>
</tbody>
</table>

Persistence and Degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence and Degradability</th>
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</thead>
<tbody>
<tr>
<td>Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution</td>
<td>Not established.</td>
</tr>
</tbody>
</table>

Bioaccumulative Potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulative Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution</td>
<td>Not established.</td>
</tr>
<tr>
<td>Ammonium nitrate (6484-52-2)</td>
<td>(no bioaccumulation expected)</td>
</tr>
</tbody>
</table>

BCF Fish 1: -3.1 (at 25 °C)

Mobility in Soil: Not available

Other Adverse Effects
Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Destroy and dispose of in accordance with applicable local, state, provincial, territorial, federal and international regulations. Consult with an Orica technical representative.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

In Accordance with DOT

Proper Shipping Name: AMMONIUM NITRATE, LIQUID (hot concentrated solution)
Hazard Class: 5.1
Identification Number: UN2426
Label Codes: 5.1
ERG Number: 140

In Accordance with IMDG

Proper Shipping Name: AMMONIUM NITRATE, LIQUID
Hazard Class: 5.1
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution

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Identification Number : UN2426
Label Codes : 5.1

EmS-No. (Fire) : F-H
EmS-No. (Spillage) : S-Q

In Accordance with IATA
Proper Shipping Name : AMMONIUM NITRATE, LIQUID
Identification Number : 5.1
Hazard Class : UN2426
ERG Code (IATA) : 5L

In Accordance with TDG
Proper Shipping Name : AMMONIUM NITRATE, LIQUID
Hazard Class : 5.1
Identification Number : UN2426
Label Codes : 5.1

SECTION 15: REGULATORY INFORMATION
US Federal Regulations
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution
SARA Section 311/312 Hazard Classes
Physical hazard - Oxidizer (liquid, solid or gas)
Health hazard - Serious eye damage or eye irritation
Health hazard - Hazard Not Otherwise Classified (HNOC)

Ammonium nitrate (6484-52-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State Regulations
Ammonium nitrate (6484-52-2)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

Canadian Regulations
Ammonium nitrate (6484-52-2)
Listed on the Canadian DSL (Domestic Substances List)

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION
Date of Preparation or Latest Revision : 05/30/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada’s Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

Eye Irrit. 2A : Serious eye damage/eye irritation Category 2A
Ox. Liq. 3 : Oxidizing liquids Category 3
H272 : May intensify fire; oxidizer
H319 : Causes serious eye irritation
Ammonium Nitrate Solution, Nitric Acid Ammonium Salt Solution

Safety Data Sheet

All information contained herein and in any supporting documents is provided for informational purposes only and is as accurate and up-to-date as possible at the time of publication. Since Orica and its related entities cannot anticipate or control the conditions under which this information may be used, users must review this information in the specific context of the intended application and must make their own determinations as to the suitability of this information for such users' purposes. To the maximum extent permitted by law, nothing contained herein and in any supporting documents shall be deemed to be an express or implied warranty, and Orica expressly disclaims all warranties and representations, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Orica will not be responsible for any loss whatsoever resulting from any use or reliance upon this information.

NA GHS SDS 2015 (Can, US)