SECTION 1: IDENTIFICATION

Product Identifier: Ammonium Nitrate Solution
Product Names and Synonyms: Ammonium Nitrate Solution, ANS, ANSOL
Intended Use: As an ingredient in commercial explosives.
Intended Users: For use only under strictly controlled conditions and only by qualified personnel who are fully trained in the handling and use of this product.

Name, Address, and Telephone of the Responsible Party:
Austin Powder Company
25800 Science Park Dr.
Cleveland, OH 44122
216-464-2400 during normal business hours
877-836-8286 Toll Free 24/7
www.austinpowder.com

In Case of Emergency Call CHEMTREC – TOLL FREE 24/7
800-424-9300 DOMESTIC
1-703-527-3887 INTERNATIONAL AND MARINE

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture:

<table>
<thead>
<tr>
<th>Code</th>
<th>Hazard Class</th>
<th>Hazard Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>H272</td>
<td>Oxidizing Liquid</td>
<td>3</td>
</tr>
<tr>
<td>H303</td>
<td>Acute Toxicity, oral</td>
<td>5</td>
</tr>
<tr>
<td>H315</td>
<td>Skin Corrosion / Irritation</td>
<td>2</td>
</tr>
<tr>
<td>H319</td>
<td>Serious eye damage / eye irritation</td>
<td>2A</td>
</tr>
<tr>
<td>H335</td>
<td>Specific target organ toxicity, single exposure; Respiratory tract irritation</td>
<td>3</td>
</tr>
</tbody>
</table>

Label Elements

Warning

Hazard Statements

May intensify fire; oxidizer
May be harmful if swallowed
Causes skin irritation
Causes eye irritation
May cause respiratory irritation

Precautionary Statements

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe fumes.
Wear eye protection, protective gloves recommended.
Ammonium Nitrate Solution (SDS: P-2)  Safety Data Sheet

IF SWALLOWED: Get immediate medical attention. DO NOT induce vomiting.
IF ON SKIN: Wash contact area with soap and water. If irritation occurs, get medical attention.
Take off contaminated clothing and wash before reuse.
IF INHALED: Remove person to fresh air. Keep at rest in a position comfortable for breathing.

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 attention.
If exposed or concerned, or you do not feel well: Get medical attention.
Store locked-up in a ventilated space, in accordance with all applicable regulations.
Dispose of contents/container in accordance with all applicable regulations.

Other Hazards:

In case of fire: Extreme risk of explosion. Evacuate area.

Exposure reaction may be aggravated for those with pre-existing eye, skin, or respiratory conditions.
Causes 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.

Unknown Acute Toxicity: Not available

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS No.</th>
<th>% (w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>CAS No. 6484-52-2</td>
<td>75-90</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

General: This material may be hot during transportation and storage, up to 115°C (240°F); take
the proper precautions. Never give anything by mouth to an unconscious person. If
you feel unwell, get medical attention, show the label where possible.

Inhalation: When symptoms occur: move to open air, keep at rest and in a position comfortable for
breathing. Get medical attention. Ventilate suspected area.

Skin Contact: Wash contact areas with soap and water. Remove contaminated clothing. Wash
contaminated clothing before reuse.

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

Ingestion: Rinse mouth. DO NOT induce vomiting. Get medical attention.

Most Important Symptoms and Effects both Acute and Delayed:

Inhalation: May cause irritation to the respiratory tract, symptoms include:
sneezing, coughing, burning sensation of throat with constricting sensation of the
larynx and difficulty in breathing.

Skin Contact: May cause mild skin irritation. Symptoms may include: redness, pain, swelling, itching,
burning, dryness and dermatitis. May cause a more severe irritation or allergic reaction
in sensitive individuals.

Eye Contact: May cause serious eye irritation. Symptoms may include redness, pain, swelling,
itching, burning, tearing and blurred vision.

Ingestion: Ammonium nitrate ingestion may cause methemoglobinemia. Initial manifestation of
methemoglobinemia is cyanosis, characterized by blue 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. If ingested, nitrates may be reduced to nitrites by bacteria in the digestive tract. Signs and symptoms of nitrite poisoning include methemoglobinemia, nausea, dizziness, increased heart rate, hypotension, fainting and, possibly shock.

**Chronic Symptoms:** May cause irritation to the respiratory tract.

**Indication of Any Immediate Medical Attention and Special Treatment Needed:**

If exposed, concerned or you don’t feel well, get medical attention.

### SECTION 5: FIRE FIGHTING MEASURES

**DO NOT fight fires involving Ammonium Nitrate.** There is an extreme risk that ammonium nitrate involved in a fire may detonate, especially if confined. Evacuate the area in all directions for one (1) mile or more if any amount of ammonium nitrate is involved in a fire. Evacuation is recommended if the initial (incipient) fire, not involving ammonium nitrate, becomes intense. General extinguishers may be used on the initial fire, not involving ammonium nitrate, such as electrical equipment fires, tire fires or a general plant fire. Water may be used to cool ammonium nitrate not involved in the initial fire. Consult the most current Emergency Response Guidebook (ERG), Guide 140 for additional information.

**Extinguishing Media**

**Suitable Extinguishing Media:** None.

**Unsuitable Extinguishing Media:** For fires near ammonium nitrate solution, dry chemical, foams, steam and smothering devices are not effective, can lead to possible explosion and must not be used.

**Special Hazards Arising from the Substance or Mixture**

**Fire Hazard:** There is an extreme risk that ammonium nitrate involved in a fire may detonate. In a fire, the water portion of the solution boils off quickly, leaving solid or molten ammonium nitrate.

**Advice for Firefighters**

**Precautionary Measures:** It is recommended that the amount and location of ammonium nitrate solution stored near a fire be determined prior to committing firefighters to fight the fire.  

**Firefighting Instructions:** When fighting the initial fire, not involving ammonium nitrate, firefighters should follow standard firefighting procedures for the materials involved.

**Hazardous Combustion**

No unusual combustion products are expected. However, toxic fumes will be present.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures**

**General Measures:** Contact the manufacturer or CHEMTREC. No smoking, open flames or flame/spark producing items in the area. This material may be hot during transportation and storage, up to 115°C (240°F), take the proper precautions.

**For Non-Emergency Personnel**

**Protective Equipment:** Use appropriate personal protection equipment (PPE).
Ammonium Nitrate Solution (SDS: P-2)  

Emergency Procedures: Isolate the area from unnecessary personnel.

For Emergency Personnel

Protective Equipment: Provide cleanup crew with proper PPE.

Emergency Procedures: Ventilate area.

Emergency Precautions: Stop the discharge if safe to do so. Ventilate area.

Methods and Material for Containment and Cleaning Up: Contact manufacturer or CHEMTREC.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards when Processed: Any proposed use of this product in elevated temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. A “hot work” program consistent with OSHA requirements at 29 CFR 1910.252 must be used when performing hot work on ammonium nitrate process equipment, storage areas or containers related to the intended use.

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

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: May be corrosive to metals. Smoking, open flames, and unauthorized sparking or flame-producing devices are prohibited.

Storage Conditions: Storage areas should be inspected regularly by an individual trained to identify potential hazards and ensure that all safety and security control measures are being properly implemented. All ammonium nitrate storage sites must comply with ATF, OSHA or NRCAN regulations.

Incompatible Materials: Avoid contamination with combustible or flammable materials, strong acids, strong bases, strong oxidizing agents, reducing agents, chlorinated compounds, copper (any alloys like bronze and brass), metal powders and peroxides.

Special Rules on Packaging: Packaging in accordance with USDOT or NRCAN regulations.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate, CAS No. 6484-52-2</td>
<td></td>
</tr>
<tr>
<td>USA ACGIH (nuisance dust)</td>
<td>ACGIH TWA (mg/m³)</td>
</tr>
<tr>
<td>USA OSHA (nuisance dust)</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
</tr>
</tbody>
</table>

Exposure Controls:

Appropriate Engineering Controls: Product should be handled and used under strictly controlled conditions. Emergency eye wash fountains and safety showers should be available in the vicinity of any potential exposure, but are not required.
Ammonium Nitrate Solution (SDS: P-2)  

Personal Protective Equipment:

**Hand Protection:** Chemical and heat resistant gloves.

**Eye Protection:** Safety glasses with side shields or safety goggles.

**Respiratory Protection:** Approved respiratory protection should be worn when recommended by a risk assessment or if irritation is experienced.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**Information on Physical and Chemical Properties:**

- **Appearance:** Clear liquid
- **Odor:** Slight ammonia odor
- **Odor threshold:** Not available
- **Vapor density:** Not relevant
- **pH:** 4-6
- **Freezing point (Crystal point):**
  - 75% solution – 40°C (105°F)
  - 90% solution – 95°C (202°F)
- **Initial boiling point and boiling range:** Not available
- **Flash point:** Not relevant
- **Evaporation rate:** Not available
- **Flammability:** Will not burn
- **Upper / lower flammability or explosive limits:** Not available
- **Vapor pressure:** Not available
- **Bulk Density:**
  - 75% solution – 1.35 g/cc (11.3 lb/gal)
  - 90% solution – 1.41 g/cc (11.8 lb/gal)
- **Solubility (for ammonium nitrate in water):** 118 g/100 ml @ 0°C (32°F)
- **Partition coefficient:** n-octanol/water:
  - Not available
- **Auto-ignition temperature:** Not available
- **Decomposition temperature:** 210°C (410°F)
- **Viscosity:** Not relevant
- **Explosive properties:** Mass detonation hazard when involved in a fire
- **Explosion Data – Sensitivity to Mechanical Impact:** Not sensitive to mechanical impact
- **Explosion Data – Sensitivity to Static Discharge:** Not sensitive to static discharge

**SECTION 10: STABILITY AND REACTIVITY**

**Reactivity and Chemical Stability:** Stable and non-reactive under normal conditions of transportation, storage, handling and use.

**Possibility of Hazardous Reactions:** Polymerization will not occur.

**Conditions to Avoid:** Open flame and elevated temperatures.

**Incompatible Materials:** Avoid contamination with combustible or flammable materials, strong acids, strong bases, strong oxidizing agents, reducing agents, chlorinated compounds, copper (any alloys like bronze and brass), metal powders and peroxides.

**Hazardous Decomposition Products:** No unusual fumes or decomposition products expected. However, toxic fumes will be present.
### SECTION 11: TOXICOLOGY INFORMATION

**Acute Toxicity:**
- See section 2

**LD50 and LC50 Data:**
- Not classified

**Skin Corrosion/Irritation:**
- May cause skin irritation

**Eye Damage/Irritation:**
- May cause serious eye irritation

**Respiratory or Skin Sensitization:**
- Not classified

**Germ Cell Mutagenicity:**
- Not classified

**Teratogenicity:**
- Not available

**Carcinogenicity:**
- Not classified

**Reproductive Toxicity:**
- Not classified

**Specific Target Organ Toxicity (Single Exposure):**
- May cause drowsiness or dizziness

**Specific Target Organ Toxicity (Repeated Exposure):**
- Not classified

**Aspiration Hazard:**
- Not classified

**Symptoms/Injuries after Inhalation:**
- Harmful if inhaled, causes methemoglobinemia. Symptoms may include headache, dizziness, nausea and a loss of coordination.

**Symptoms/Injuries after Skin Contact:**
- May cause mild skin irritation. Symptoms may include: redness, pain, swelling, itching, burning, dryness and dermatitis. May cause a more severe or allergic reaction in sensitive individuals.

**Symptoms/Injuries after Eye Contact:**
- May cause serious eye irritation. Symptoms may include redness, pain, swelling, itching, burning, tearing and blurred vision.

**Symptoms/Injuries after Ingestion:**

**Chronic Symptoms:**
- Although none are expected under normal conditions, inhalation exposure may cause methemoglobinemia and may damage respiratory tract.

**LD50 and LC50 Data (ingredients):**

<table>
<thead>
<tr>
<th>Component</th>
<th>Route of Exposure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate, CAS No. 6484-52-2</td>
<td>Oral Rat</td>
<td>2,217 mg/kg of body weight</td>
</tr>
<tr>
<td></td>
<td>Inhalation Rat</td>
<td>&gt; 88.8 mg/l/4h</td>
</tr>
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</table>

### SECTION 12: ECOLOGY INFORMATION

Not available

### SECTION 13: DISPOSAL CONSIDERATIONS

Call manufacturer or CHEMTREC.
SECTION 14: TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>Agency</th>
<th>UN Number</th>
<th>Proper Shipping Name</th>
<th>Hazard Class</th>
<th>Label Codes</th>
<th>PG</th>
<th>Marine Pollutant</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>US DOT</td>
<td>UN2426</td>
<td>Ammonium nitrate, liquid, <em>(hot concentrated solution)</em></td>
<td>5.1</td>
<td>5.1</td>
<td>--</td>
<td>No</td>
<td>ERG-140</td>
</tr>
<tr>
<td>Canadian TDG</td>
<td>UN2426</td>
<td>Ammonium nitrate liquid, <em>(hot concentrated solution)</em></td>
<td>5.1</td>
<td>5.1</td>
<td>--</td>
<td>No</td>
<td>--</td>
</tr>
<tr>
<td>IMDG (Vessel)</td>
<td>UN1942</td>
<td>Ammonium nitrate, liquid</td>
<td>5.1</td>
<td>5.1</td>
<td>--</td>
<td>No</td>
<td>EmS-No, Fire: F-H</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spillage: S-Q</td>
</tr>
<tr>
<td>IATA (Air)</td>
<td>Contact the manufacturer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 15: REGULATORY INFORMATION

US Federal Regulations:
Emergency Planning and Community Right-To-Know Act (EPCRA), a/k/a Superfund Amendments and Reauthorization Act (SARA) Title III
Toxic Substances Control Act (TSCA)
TSCA Section 8

Ammonium nitrate, CAS No. 6484-52-2

<table>
<thead>
<tr>
<th>SARA Section 311/312</th>
<th>Reactive Hazard</th>
<th>Fire Hazard</th>
<th>Health Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Listed on the United States TSCA inventory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Canadian Regulations:
Domestic Substances List (DSL)
Workplace Hazardous Materials Information System (WHMIS)

Ammonium nitrate, CAS No. 6484-52-2

<table>
<thead>
<tr>
<th>DSL</th>
<th>Listed on the Canadian DSL</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHMIS Classification</td>
<td>Class C – Oxidizing Substance Class D, Division 2, Subdivision B – Toxic material causing other toxic effects.</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF LAST REVISION

This SDS was prepared in accordance with US (29 CFR 1900.1200) and Canadian (WHMIS 2015) requirements.

SDS: P-2 Initial Issue Date: 6/1/2015 Last Revision Date: 06/03/2015 Version: 5

Party Responsible for the Preparation of this Document:
Austin Powder Company
Cleveland, OH 44122
216-464-2400

This information is based on Austin Powder Company’s current knowledge and is intended to describe the product for the purposes of health and safety requirements only. It should not be construed as guaranteeing any specific property of the product.