CERIC AMMONIUM NITRATE, Solutions up to 0.100 N

MATERIAL SAFETY DATA SHEET

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

Product Identification

Product Name: CERIC AMMONIUM NITRATE, Solutions up to 0.100 N

Synonyms:

Chemical Formula: Mixture

Formula Weight: NA

Chemical Family: Laboratory solution

Integra Product Numbers: C379.8N

Physical Data

Boiling Point: NA
Melting Point: NA
Vapor Pressure: NA
Solubility: Miscible with water.

Appearance and Odor:
Clear reddish orange liquid.

Fire and Explosion Data

Flash Point: NA
Auto-ignition Temperature: NA
Flammable Limits (% by volume in air): Upper: NA Lower: NA

Fire Extinguishing Media:
Material is not flammable. Use extinguishing media suitable to surrounding materials.

Special Firefighting Procedures:
Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.

Unusual Fire and Explosion Hazards:
Fire conditions may liberate toxic and noxious fumes.

Health Hazard Information

Effects of Overexposure
Skin Contact:
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Revision Date: 16-Apr-08  
Revision No.: 002

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Health Hazard Information

Effects of Overexposure:

Skin Contact:  
Contact may cause severe irritation or burns.

Eye Contact:  
Contact may burn or damage the eyes.

Ingestion:  
Harmful if swallowed. Ingestion may cause nausea, vomiting and gastrointestinal irritation and burns to the mouth and throat. Large doses of nitrates may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, weakness and convulsions.

Inhalation:  
Harmful if inhaled. Vapors and mists are corrosive to the mucous membranes.

Chronic Effects of Overexposure:  
Under some circumstances methemoglobinemia occurs in individuals when nitrates are converted to nitrites in the stomach. Symptoms may include nausea, vomiting, dizziness, rapid heart beat, irregular breathing and convulsions.

Exposure Limits:

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>STEL</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>2 ppm</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Ceric ammonium nitrate</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
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</tr>
<tr>
<td>Nitric acid</td>
<td>2 ppm</td>
<td>4 ppm</td>
<td>NE</td>
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<tr>
<td>Ceric ammonium nitrate</td>
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Toxicity Data:

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Water</td>
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</tr>
<tr>
<td>Nitric acid</td>
<td>TDlo (oral, human) 430 mg/kg</td>
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<tr>
<td></td>
<td>LDlo (unreported, human) 110 mg/kg</td>
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<tr>
<td></td>
<td>LC50 (inhalation, rat) 2500 ppm/1H</td>
</tr>
<tr>
<td>Ceric ammonium nitrate</td>
<td>No information available.</td>
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Medical Conditions Generally Aggravated by Exposure:

None identified

Target Organs:

Skin, eyes.

Reproductive Effects:

None identified

Carcinogenicity:

None identified

<table>
<thead>
<tr>
<th>Component</th>
<th>NTP Listing</th>
<th>IARC Listing</th>
<th>OSHA Regulated</th>
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Health Hazard Information

Component: Ceric ammonium nitrate
NTP Listing: No listing
IARC Listing: No listing
OSHA Regulated: No

Emergency First Aid Procedures

Skin Contact:
Immediately remove contaminated clothing. Flush skin with water for at least 15 minutes. Seek immediate medical attention.

Eye Contact:
Immediately flush eyes with large amounts of water, holding lids apart to ensure rinsing of entire surface. Washing eyes within several seconds of contact is essential to achieve maximum effectiveness. Get immediate medical attention.

Inhalation:
Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult administer oxygen. Seek medical attention.

Ingestion:
Do not induce vomiting. If victim is conscious, give water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Additional First aid and Treatment Notes:
No information available

Reactivity Data

Stability: Stable
Hazardous Polymerization: Will Not Occur
Incompatibles:
Incompatible with strong bases. Organic or combustible materials, strong reducing agents, powdered aluminum, cyanides, stannous chloride, thiocyanates.

Decomposition Products:
Oxides of nitrogen.

Conditions to Avoid:
Contamination. Exposure to light.

Spill and Disposal Procedures

Spill and Leak Procedures:
Prevent spread of spill. Neutralize with soda ash or lime and sweep or scoop into suitable disposal container. Flush residues with water. Wear suitable protective equipment.

Disposal Procedures:
Dispose in accordance with all Local, State and Federal regulations.

Protective Equipment

Ventilation:
Use general or local exhaust ventilation to meet TLV and PEL requirements.

Respiratory Protection:
Respiratory protection required if airborne concentrations exceed PEL or TLV. A chemical cartridge respirator with
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Protective Equipment

Respiratory Protection:
   an acid/organic cartridge is recommended.

Skin and Eye Protective Equipment:
   Safety goggles, protective clothing and gloves. Maintain an eyewash station and safety shower nearby.

Storage and Handling Precautions

Storage Area: CORROSIVE, ACID
   Store in a cool, dry, corrosive materials storage area. Minimize exposure to air and light. Protect containers from physical damage.

Transportation Information

☑ Regulated Material domestic ground transportation
   (reference: CFR Title 49, Transportation)
   Proper Shipping Name: Nitric acid
   UN or NA Identification number: UN2031 Hazard Class and Label: 8 Corrosive
   Packing Group: II Subsidiary Risk and Label:

☑ Regulated Material via Air Transportation
   (reference: ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air)
   Proper Shipping Name: Nitric acid
   UN Identification Number: UN2031 Hazard Class and Label: 8 Corrosive
   Packing Group: II Subsidiary Risk and Label:
   Packing Instruction Max net qty per package
   Passenger Aircraft: 807/Y807 1/0.5 L
   Cargo Aircraft: 813 30 L

Regulatory Information

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<tr>
<th>Component</th>
<th>TSCA Inventory</th>
<th>CERCLA RQ</th>
<th>SARA EHS TPQ</th>
<th>SARA 313 Toxic Release</th>
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<tr>
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<tr>
<td>Nitric acid</td>
<td>✔</td>
<td>1000 lbs</td>
<td>✔ 1000 lbs</td>
<td>✔ 1.0 lbs</td>
</tr>
<tr>
<td>Ceric ammonium nitrate</td>
<td>✔</td>
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SARA Hazard Categories: Acute Chronic Flammability Pressure Reactivity

Water
Nitric acid
Ceric ammonium nitrate

Clean Air Act Categories: SOCMI HAP Volatile HAP Organic HAP Ozone Depleting

Water
Nitric acid
Ceric ammonium nitrate

MSDS Revision History:
002 - Updated Header Information
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***** END OF MSDS *****