



# Material Safety Data Sheet

<b>NFPA Classification</b>	<b>DOT/TDG Pictograms</b>	<b>WHMIS Classification</b>	<b>Protective Clothing</b>
Health 0 Flammability 2 Reactivity 1 Specific Hazard			

## Section I. Chemical Product and Company Identification

<b>PRODUCT NAME/ TRADE NAME</b>		Ammonium Nitrate Liquid 20-0-0	
<b>SYNONYM</b>		57% Ammonium Nitrate Solution	
<b>CHEMICAL NAME</b>		Not Applicable	
<b>CHEMICAL FAMILY</b>		Nitrate Salt, Inorganic salt	
<b>CHEMICAL FORMULA</b>		NH <sub>4</sub> NO <sub>3</sub>	
<b>MATERIAL USES</b>		Agricultural use: Fertilizer	
<b>MANUFACTURER</b>		<b>SUPPLIER</b>	
Apache Nitrogen Products, Inc. P. O. Box 700 Benson, AZ 85602 Fax (520) 720-4158 www.apachenitro.com		Apache Nitrogen Products, Inc. P. O. Box 700 Benson, AZ 85602 Fax (520) 720-4158 www.apachenitro.com	
		<b>Revision Number: 1</b> <b>MSDS prepared by</b> <b>Technical Services on:</b> June 27, 2005 <b>24 Hour Emergency Telephone Number:</b> (520) 720-2150 (Ask for the Shift Supervisor) CHEMTREC 1-800-424-9300	

## Section II. Hazardous Ingredients

NAME	CAS #	Exposure Limits (ACGIH)						% by Weight
		TLV-TWA 10mg/m <sup>3</sup>	TLV-TWA ppm	STEL 10mg/m <sup>3</sup>	STEL ppm	CEIL 10mg/m <sup>3</sup>	CEIL ppm	
Ammonium nitrate	6484-52-2	10						58

### Other Information on Ingredients:

## Section III. Hazards Identification

<b>POTENTIAL ACUTE HEALTH EFFECTS</b>	<p>Dangerous in case of ingestion. May interfere with oxygen carrying capacity of the blood (methemoglobinemia). Over-exposure by inhalation may cause respiratory irritation. This product may irritate eyes and skin upon contact but is unlikely to injure tissue.</p> <p>Symptoms of overexposure may include:</p> <ul style="list-style-type: none"> <li>• Cardiovascular: methemoglobinemia, low blood pressure (hypotension), irregular heart beat (arrhythmia), shock (vasodilation)</li> <li>• CNS: headache, dizziness, generalized tingling sensation (paresthesia)</li> <li>• Gastrointestinal: nausea, vomiting, diarrhea, abdominal pain</li> <li>• Eye: redness and inflammation (conjunctivitis)</li> <li>• Skin: bluish discoloration (cyanosis) with profuse sweating or flushed skin</li> </ul>
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**Section III. Hazards Identification**

<b>POTENTIAL CHRONIC HEALTH EFFECTS</b>	<p>CARCINOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA.  MUTAGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA.  TERATOGENIC EFFECTS: NONE by ACGIH, EPA, IARC, NTP, OSHA.</p> <p>Repeated or prolonged overexposure by ingestion can reduce the oxygen carrying capacity of the blood producing anoxia in infants or individuals with preexisting bowel or blood diseases. Ensure that nitrate containing fertilizers are not applied near wells where contamination may occur. Consult your agronomist regarding the advisability and precautions for use of nitrate fertilizers on fruit or vegetable crops.</p>
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**Section IV. First Aid Measures**

<b>EYE CONTACT</b>	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Obtain medical attention if irritation persists.
<b>MINOR SKIN CONTACT</b>	May cause skin irritation. Wash contaminated skin with soap and water. Cover dry or irritated skin with a good quality skin lotion. If irritation persists, seek medical attention.
<b>EXTENSIVE SKIN CONTACT</b>	No additional information.
<b>MINOR INHALATION</b>	Repeated or prolonged inhalation of spray mist may produce irritation of the respiratory tract. Loosen tight clothing. Allow affected persons to rest in a well ventilated area. Obtain medical attention if irritation persists.
<b>SEVERE INHALATION</b>	<p>In emergency situations use proper respiratory protection to evacuate affected individuals to a safe area as soon as possible. May cause headache, nausea or weakness in case of prolonged or repeated exposure. Loosen tight clothing around the person's neck and waist.</p> <p>Oxygen may be administered if breathing is difficult. If the person is not breathing, perform artificial respiration. Obtain immediate medical attention.</p>
<b>SLIGHT INGESTION</b>	Have conscious person drink several glasses of water or milk. Induce vomiting. Lower the head so that the vomit will not reenter the mouth and throat. <b>NEVER</b> give an unconscious person anything to drink. Obtain medical attention.
<b>EXTENSIVE INGESTION</b>	No additional information.

**Section V. Fire and Explosion Data**

<b>THE PRODUCT IS</b>	Non-flammable.
<b>AUTO-IGNITION TEMPERATURE</b>	Not applicable.
<b>FLASH POINT</b>	Not applicable.
<b>FLAMMABILITY LIMITS</b>	Not applicable.
<b>PRODUCTS OF COMBUSTION</b>	Material will not burn, but thermal decomposition may result in flammable/toxic gases being formed after material evaporates to dryness. These products are nitrogen oxides and ammonia (NO, NO <sub>2</sub> , NH <sub>3</sub> ).
<b>FIRE HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES</b>	Dangerous if evaporated to near dryness. Dry residue may form explosive mixtures with organic materials. Avoid temperatures above 100°C (212°F) which may result in evaporation, thermal decomposition or explosion.
<b>EXPLOSION HAZARD IN THE PRESENCE OF VARIOUS SUBSTANCES</b>	Incompatible with sulfur, chlorides, reducing agents, or other oxidizers. Incompatible with finely powdered metals (cadmium, copper, lead, cobalt, nickel, bismuth, chromium, <u>magnesium, zinc, sodium, potassium and aluminum</u> ). Solution may detonate if subjected to heat and pressure if evaporated to near dryness, or allowed to freeze or salt out.
<b>FIRE FIGHTING MEDIA AND INSTRUCTIONS</b>	If evaporated to dryness, acts as an oxidizing agent, supports combustion by liberating oxygen even if smothered. Cool containing vessels with flooding quantities of water until well after fire is out. A self contained breathing apparatus should be used to avoid inhalation of toxic fumes. When heated to decomposition it emits toxic fumes (NH <sub>3</sub> , NO, NO <sub>2</sub> ...). Water runoff can cause environmental damage. Dike and collect water used to fight fire.
<b>SPECIAL REMARKS ON FIRE HAZARDS</b>	Dangerous in contact with organic materials. Material supports combustion. Evolves toxic fumes when heated to the decomposition state. Avoid temperatures above 100°C (212°F). On evaporation to dryness thermal decomposition or explosion may result. Emergency responders should use self contained breathing apparatus and protective clothing.
<b>SPECIAL REMARKS ON EXPLOSION HAZARDS</b>	Unconfirmed industry reports indicate a possibility that ammonium nitrate containing solutions may detonate if subjected to extreme heat while under pressure or if allowed to evaporate to near dryness.

**Section VI. Accidental Release Measures**

<b>SMALL SPILL</b>	Stop leak if possible to do so without risk. Dike and contain spilled material. Ensure that the spilled material does not enter sewers, wells, or watercourses. Product will promote algae growth which may degrade water quality and taste. Will disperse in water. Notify downstream water users. Nitrate in potable drinking water should be maintained below 10mg/L. Pump up spilled material and place in suitable containers for reuse or disposal. Ensure disposal complies with local regulations.
<b>LARGE SPILL</b>	No additional information in case of a spill/or a leak of the product.

**Section VII. Handling and Storage**

<b>PRECAUTIONS</b>	Keep away from incompatible materials such as reducing agents, or combustible materials. Avoid contact with skin and eyes. Do not breathe mists. Keep out of reach of children.
<b>STORAGE</b>	Keep at temperatures not exceeding 100°C (212°F). Keep away from incompatible materials. Keep from freezing or salting out.

**Section VIII. Exposure Controls / Personal Protection**

<b>ENGINEERING CONTROLS</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.
<b>PERSONAL PROTECTION</b>	The selection of personal protective equipment varies, depending upon conditions of use. Wear appropriate respiratory protection for dust/mist when ventilation is inadequate. A filtering face piece dust mask is recommended for most applications if respiratory protection is needed. Where skin and eye contact may occur as a result of brief periodic exposures, wear long sleeved clothing, coveralls, chemical resistant gloves, and safety glasses with side shields.
<b>PERSONAL PROTECTION IN CASE OF LARGE RELEASE</b>	NIOSH approved ammonia cartridge respirators with dust, mist or fume prefilters may be necessary to prevent overexposure by inhalation. Where skin and eye contact may occur as a result of brief, periodic exposures, wear long sleeved clothing, coveralls or splash apron, chemical resistant gloves, and safety glasses with side shields. For U.S. work sites where respiratory protection is required, ensure that a respiratory protection program meeting 29 CFR 1910.134 is in place.
<b>EXPOSURE LIMITS</b>	ACGIH TLV- TWA: 25 PPM for ammonia. OSHA PEL: Not Listed OSHA List of Highly Hazardous Chemicals, Toxics and Reactives: Not Listed NIOSH VALUES: REL: Not Listed  Federal, State or Provincial exposure limits may vary by jurisdiction. Consult local authorities for acceptable exposure limits in your area.

**Section IX. Physical and Chemical Properties**

<b>PHYSICAL STATE AND APPEARANCE</b>	Liquid. (Clear to slightly hazy liquid.)		
<b>MOLECULAR WEIGHT</b>	Not applicable.	<b>COLOR</b>	Clear
<b>pH (10% SOLN/WATER)</b>	6.5-7.5	<b>ODOR</b>	Odorless.
<b>BOILING POINT</b>	Decomposes	<b>ODOR THRESHOLD</b>	Not available.
<b>MELTING POINT</b>	Salt out temperature: 6°C (42°F)	<b>TASTE</b>	Acrid. Burning. Disagreeable
<b>CRITICAL TEMPERATURE</b>	Not applicable	<b>VOLATILITY</b>	42wt% (water).
<b>SPECIFIC GRAVITY g/cc</b>	1.27 (Water=1)	<b>SOLUBILITY</b>	Easily soluble in cold water, hot water.
<b>BULK DENSITY</b>	10.6lbs/gal (US)	<b>DISPERSION PROPERTIES</b>	See solubility in water.
<b>VAPOR PRESSURE</b>	17.2mm Hg (vapor pressure of Water @ 20°C.)	<b>WATER/OIL DIST. COEFF.</b>	Completely soluble and dispersible in water.
<b>VAPOR DENSITY</b>	Not applicable.		

**Section X. Stability and Reactivity Data**

<b>STABILITY</b>	The product is stable.
<b>INSTABILITY TEMPERATURE</b>	Not available.
<b>CONDITIONS OF INSTABILITY</b>	No additional remark.
<b>INCOMPATIBILITY WITH VARIOUS SUBSTANCES</b>	Slightly reactive with reducing agents, combustible materials, organic materials, metals. slightly reactive with acids, alkalis.
<b>CORROSIVITY</b>	Corrosive to zinc, copper, and aluminum. Non-corrosive to mild steel, or stainless steel (304 or 316). Consult your sales representative for further information on storage and handling system requirements.
<b>SPECIAL REMARKS ON REACTIVITY</b>	Incompatible with sulfur, chlorides, or other oxidizers. Incompatible with finely powdered metals (cadmium, copper, lead, cobalt, nickel, bismuth, chromium, magnesium, zinc, sodium, potassium and aluminum). May be sensitive to explosion by detonation, heat or shock when evaporated to near dryness.
<b>SPECIAL REMARKS ON CORROSIVITY</b>	Incompatible with copper alloys. Corrosive to ferrous metals and alloys. Corrosive to brass. Contact your sales representative or a metallurgical specialist to ensure compatibility with system equipment.

**Section XI. Toxicological Information**

<b>SIGNIFICANT ROUTES OF EXPOSURE</b>	Ingestion. Inhalation.
<b>SPECIAL REMARKS ON TOXICITY TO ANIMALS</b>	Will slowly release ammonia. Ammonia is a toxic hazard to fish. May be harmful to livestock and wildlife if ingested. Clean up all spilled material, especially where bulk fertilizer loading of equipment occurs to prevent animal exposure.

**Section XI. Toxicological Information**

<b>OTHER EFFECTS ON HUMANS</b>	Recent studies undertaken by the U.S. Government using Canadian and American databases have determined that ammonium nitrate fertilizer does not demonstrate any risk of gastrointestinal cancer.
<b>SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS</b>	Exposure can cause headaches, stomach pains, vomiting and diarrhea. Under prolonged or repeated overexposure, may produce methemoglobin which reduces oxygen supply in the circulating blood. Although predominantly affecting infants, nitrate induced methemoglobinemia has also been documented in adults.
<b>SPECIAL REMARKS ON OTHER EFFECTS ON HUMANS</b>	No additional remarks.


**Section XII. Ecological Information**

<b>ECOTOXICITY</b>	May be harmful to fish, livestock, and wildlife. Dissolved mineral salts may cause irritation of the digestive tract. Non-persistent. Non-cumulative when applied using normal agricultural practices. The product itself and its products of degradation are not harmful under normal conditions of careful and responsible use.  Aquatic/Marine Toxicity: Will release ammonium ions. Ammonia is a toxic hazard to fish. Avoid spills or release to watercourses. Will disperse with current. Release to watercourses may cause effects down stream from the point of release. U.S. D.O.T.: This material NOT listed as a Marine pollutant.
<b>BOD and COD</b>	Not available.
<b>PRODUCTS OF DEGRADATION</b>	Ammonia, nitrogen oxides (NO, NO <sub>2</sub> ...)
<b>TOXICITY OF THE PRODUCTS OF DEGRADATION</b>	The product itself and its products of degradation are not harmful under normal conditions of use. Avoid spills or releases to watercourses.
<b>SPECIAL REMARKS ON THE PRODUCTS OF DEGRADATION</b>	Product will promote algae growth which may degrade water quality and taste. Notify downstream water users. Nitrate in potable drinking water should be maintained below 10mg/L. Will dissolve and disperse in water.

**Section XIII. Disposal Considerations**

<b>WASTE DISPOSAL OR RECYCLING</b>	Recycle to process, if possible. Recover and place material in a suitable container for intended use or disposal. Ensure disposal complies with government requirements and local regulations.
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**Section XIV. Transport Information**

<b>DOT / TDG CLASSIFICATION</b>	Not controlled under DOT (U.S.) or TDG (Canada) only if kept as a non-segregating solution during shipment. The material is subject to transport regulations if frozen or if allowed to salt out.
<b>PIN and Shipping Name</b>	Not applicable.
<b>SPECIAL PROVISIONS FOR TRANSPORT</b>	Not applicable
<b>DOT (U.S.A.) (Pictograms)</b>	

**National Fire Protection Association (U.S.A.)**  
Dried product residue can act as an oxidizer.  
Hazards presented under acute emergency conditions only:



**NOTICE TO READER**

The buyer assumes all risk in connection with the use of this material. The buyer assumes all responsibility for ensuring this material is used in a safe manner in compliance with applicable environmental, health and safety laws, policies and guidelines. Apache Nitrogen Products, Inc. assumes no responsibility or liability for the information supplied on this sheet, including any damages or injury caused thereby. Apache Nitrogen Products, Inc. does not warrant the fitness of this material for any particular use and assumes no responsibility for injury or damage caused directly or indirectly by or related to the use of the material. The information contained in this sheet is developed from what Apache Nitrogen Products, Inc. believes to be accurate and reliable sources, and is based on the opinions and facts available on the date of preparation.