

## SAFETY DATA SHEET

Preparation Date: 05/19/2015

Revision date 4/8/2019

Revision Number: G3

### 1. IDENTIFICATION

**Product identifier**

**Product code:** A1248  
**Product Name:** AMMONIUM SULFATE, PRIMARY STANDARD

**Other means of identification**

**Synonyms:** Ammonium hydrogen sulfate  
 Ammonium sulfate  
 Ammonium sulfate ((NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>)  
 Ammonium sulfate (2:1)  
 Ammonium sulphate  
 Diammonium sulfate  
 Diammonium sulphate  
 Dolamin  
 Mascagnite  
 Sulfuric acid, diammonium salt

**CAS #:** 7783-20-2  
**RTECS #** BS4500000  
**CI#:** Not available

**Recommended use of the chemical and restrictions on use**

**Recommended use:** Feed additive. Chemical intermediate. Cellulose insulation. Fire extinguishing agent. Production of metals, noble metals. Woodworking industry for production of curing agents for urea-formaldehyde and melamine-formaldehyde resins used in the manufacture of chipboard. In pharmaceuticals. Textile industry. Analytic Chemistry. In flame-retardant products. Food Additive. Fertilizer compositons. Herbicide.

**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>  
**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Tom Tyner (USA - West Coast)  
**Contact Person:** Ibad Tirmiz (USA - East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 2
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Serious eye damage/eye irritation

Category 2B

**Label elements**

**Warning**

**Hazard statements**  
Causes skin irritation  
Causes eye irritation



**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May be harmful if swallowed  
Harmful to aquatic life with long lasting effects  
Harmful to aquatic life

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves

**Precautionary Statements - Response**

*Specific treatment (see .? on this label)*

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 advice/attention.  
IF ON SKIN: Wash with plenty of water  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash it before reuse

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS No	Weight-%
Ammonium Sulfate	7783-20-2	100

**4. FIRST AID MEASURES**

**First aid measures**

**General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention. If symptoms persist, call a physician.

**Eye Contact:**

Flush eyes with water for 15 minutes. Get medical attention.

**Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give

oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Causes eye irritation  
Causes skin irritation  
May cause irritation of respiratory tract  
May cause digestive (gastrointestinal) tract irritation  
May cause abdominal pain, nausea, vomiting, diarrhea  
Central nervous system effects

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media:**

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

**Unsuitable Extinguishing Media:**

No information available.

**Specific hazards arising from the chemical**

**Hazardous combustion products**

If it is involved in a fire the following can be released:  
Sulfur oxides. Ammonia. Nitrogen oxides (NOx).

**Specific hazards**

A mixture of ammonium sulfate and potassium chlorate decomposes with incandescence when heated. When a little ammonium sulfate is added to fused potassium nitrite, a vigorous reaction occurs attended by flame. If accidentally mixed with oxidizers like potassium chlorate, potassium nitrate or potassium nitrite, there is an explosion hazard. A mixture of ammonium sulfate and ammonium nitrate can easily be exploded by potassium or sodium-potassium alloy. Reaction with sodium hypochlorite and ammonium sulfate produces the unstable explosive nitrogen trichloride.

**Special Protective Actions for Firefighters**

**Specific Methods:**

No information available

**Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

**Environmental precautions** Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide appropriate exhaust ventilation at places where dust is formed. Avoid dust formation. Keep away from incompatible materials.

#### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not breathe vapors/dust. Do not ingest. Do not smoke. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

#### **Incompatible Materials:**

Strong oxidizing agents

Strong bases

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

##### **United States**

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Ammonium Sulfate	7783-20-2	None	None	None	None

##### **Canada**

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Ammonium Sulfate	7783-20-2	None	None	None	None

##### **Australia and Mexico**

Component	CAS No	Australia	Mexico
Ammonium Sulfate	7783-20-2	None	None

### Appropriate engineering controls

#### Engineering measures to reduce exposure:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Individual protection measures, such as personal protective equipment

#### Personal Protective Equipment

<b>Eye protection:</b>	Goggles Safety glasses with side-shields.
<b>Skin and body protection:</b>	Long sleeved clothing apron Gloves
<b>Respiratory protection:</b>	Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
<b>Hygiene measures:</b>	Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Solid	<b>Appearance:</b> Crystalline solid.	<b>Color:</b> Brownish-gray. White.
<b>Odor:</b> Odorless.	<b>Taste</b> No information available.	<b>Formula</b> (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
<b>Molecular/Formula weight (g/mole):</b> 132.14	<b>Flammability (solid, gas)</b> no data available	<b>Flashpoint (°C/°F):</b> No information available
<b>Flash Point Tested according to:</b> Not available	<b>Autoignition Temperature (°C/°F):</b> No information available	<b>Lower Explosion Limit (%):</b> No information available
<b>Upper Explosion Limit (%):</b> No information available	<b>Melting point/range(°C/°F):</b> 280°C/ 536°F	<b>Decomposition temperature(°C/°F):</b> 280-350°C/ 536-662°F
<b>Boiling point/range(°C/°F):</b> No information available	<b>Bulk density:</b> No information available	<b>Density (g/cm<sup>3</sup>):</b> No information available
<b>Specific gravity:</b> 1.77	<b>pH</b> 5.0-6.0 at 132g/l @ 25°C	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available	<b>VOC content (g/L):</b> No information available

**Odor threshold (ppm):**  
No information available

**Partition coefficient  
(n-octanol/water):**  
-5.1

**Viscosity:**  
No information available

**Miscibility:**  
No information available

**Solubility:**  
Soluble in cold water  
Insoluble in Acetone  
Insoluble in Ethanol

## 10. STABILITY AND REACTIVITY

### Reactivity

Highly reactive with oxidizing agents. Reactive with Potassium + ammonium nitrate, potassium chlorate, potassium nitrate, potassium nitrite, sodium hypochlorite, sodium/potassium alloy + ammonium nitrate..

A mixture of ammonium sulfate and potassium chlorate decomposes with incandescence when heated. When a little ammonium sulfate is added to fused potassium nitrite, a vigorous reaction occurs attended by flame

If accidentally mixed with oxidizers like potassium chlorate, potassium nitrate or potassium nitrite, there is an explosion. A mixture of ammonium sulfate and ammonium nitrate can easily be exploded by potassium or sodium-potassium alloy.

Reacts with strong bases

### Chemical stability

**Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Stable at normal conditions.

**Incompatible Materials:** Strong oxidizing agents  
Strong bases

**Hazardous decomposition products:** When heated to decomposition it emits highly toxic fumes. Sulfur oxides. Nitrogen oxides (NOx). Ammonia.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Inhalation. Ingestion.

### Acute Toxicity

### Component Information

Ammonium Sulfate

CAS No 7783-20-2

**LD50/oral/rat** = 2840 mg/kg Oral LD50 Rat; 3000-4000 mg/kg

**LD50/oral/mouse** = 640 mg/kg

**LD50/dermal/rabbit** = No information available

**LD50/dermal/rat** = > 2000 mg/kg Dermal LD50

**LC50/inhalation/rat** = No information available

LC50/inhalation/mouse = No information available  
Other LD50 or LC50 information = No information available

### Product Information

LD50/oral/rat =  
Value - Acute Tox = 2840 mg/kg

LD50/oral/mouse =  
Value - Acute Tox Oral = 640 mg/kg

LD50/dermal/rabbit  
Value - Acute Tox = No information available

LD50/dermal/rat  
VALUE - Acute Tox Dermal = >2000 mg/kg

LC50/inhalation/rat  
VALUE-Vapor = No information available  
VALUE-Gas = No information available  
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse  
VALUE-Vapor = No information available  
VALUE - Gas = No information available  
VALUE - Dust/Mist = No information available

### Symptoms

<b>Skin Contact:</b>	Causes skin irritation.
<b>Eye Contact:</b>	Causes eye irritation.
<b>Inhalation</b>	May cause respiratory tract irritation.
<b>Ingestion</b>	When ingested, its osmolarity can draw water from the body into the bowel, acting as a laxative. However, if enough is absorbed systemically it may produce Ammonia poisoning. Symptoms may include gastrointestinal (digestive) tract irritation with nausea, vomiting, hypermotility, diarrhea. May also affect eyes (Mydriasis), behavior/central nervous system (somnia, tremor, convulsions, muscle contraction or spasticity), and respiratory system (respiratory stimulation, dyspnea). Also, with ingestion of large doses of Ammonium Sulfate arises the possibility of sufficient absorption to produce diuresis, an excessive discharge of urine, and kidney damage (renal tubular disorder, abnormal renal function).
<b>Aspiration hazard</b>	No information available.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Chronic Toxicity</b>	One Russian occupational standard study discussed chronic exposure effects which may include cardiac contraction, neurotoxicity, and hypertension. This has not been confirmed in other ammonium sulfate exposed workers.
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<b>Sensitization:</b>	No information available.
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**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Ammonium Sulfate	7783-20-2	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available

**Developmental Effects:** No information available

**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Target Organs:** No information available.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Ecotoxicity effects:** Aquatic environment.

*Ammonium Sulfate - 7783-20-2*

**Fish**

250 mg/L LC50 Brachydanio rerio 96 h 1 480 mg/L LC50 Brachydanio rerio 96 h flow-through 1 420 mg/L LC50 Brachydanio rerio 96 h semi-static 1 18 mg/L LC50 Cyprinus carpio 96 h 1 32.2 - 41.9 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 1 5.2 - 8.2 mg/L LC50 Oncorhynchus mykiss 96 h static 1 100 mg/L LC50 Pimephales promelas 96 h 1 123 - 128 mg/L LC50 Poecilia reticulata 96 h semi-static 1 126 mg/L LC50 Poecilia reticulata 96 h 1 460 - 1000 mg/L LC50 Leuciscus idus 96 h static 1

**Crustacea**

14 mg/L LC50 Daphnia magna 48 h 423 mg/L EC50 Daphnia magna 24 h

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Mobility in soil** No information available

**Other adverse effects** No information available.

## 13. DISPOSAL CONSIDERATIONS

### Disposal Methods



**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ammonium Sulfate	7783-20-2	None	None	None	None

<b>14. TRANSPORT INFORMATION</b>
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**DOT**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Class** No information available  
**Packing group:** No information available  
**Emergency Response Guide Number** No information available  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions** No Information available  
**Symbol(s):** No information available  
**Description:** No information available

**TDG (Canada)**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Marine Pollutant** No Information available  
**Description:** No information available

**ADR**

**UN Number** Not regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Packing group** No information available  
**Subsidiary Risk:** No information available

**IMDG**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Marine Pollutant** No information available

**RID**

**UN Number** Not Regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Subsidiary Risk:** No information available  
**Packing group** No information available

**ICAO (air)**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available

**IATA**

**UN Number** Not Regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Subsidiary Risk:** No information available  
**Packing group** No information available  
**Precautionary Statements - Response** No information available  
**Special Provisions** No information available

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
Ammonium Sulfate	7783-20-2	PresentACTIVE	Present KE-01743	Present	Present (1)-400	Present	Present	Present 231-984-1

**U.S. Regulations***Ammonium Sulfate*

**Massachusetts RTK:** Present  
**Pennsylvania RTK:** Environmental hazard  
**Pennsylvania RTK - Environmental Hazard List** Present  
**FDA - Food Additives Generally Recognized as Safe (GRAS):** 21 CFR 184.1143  
**FDA - 21 CFR - Total Food Additives** 177.1200, 184.1143, 73.85  
**- List Sourced from EAFUS**

**California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ammonium Sulfate	7783-20-2	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Ammonium Sulfate	7783-20-2	None	None	None	Aqueous Ammonia from water dissociable ammonium salts	1.0% de minimus concentration

## U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Ammonium Sulfate	7783-20-2	Not Applicable	Not Applicable

## Canada

### WHIMIS 2015 - GHS Classifications

WHIMIS 2015 Hazard Classification Information: Not a dangerous product according to HPR classification criteria.

Component Ammonium Sulfate 7783-20-2 ( 100 )	WHIMIS 2015 Hazard Classification Not a dangerous product according to HPR classification criteria
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**Canada Hazardous Products Regulation** This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

## DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
Ammonium Sulfate	7783-20-2	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Ammonium Sulfate	7783-20-2	Not listed

Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Ammonium Sulfate	7783-20-2	Not listed

## EU Classification

### EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Ammonium Sulfate	7783-20-2	

### EU - CLP (1272/2008)

#### **R-phrase(s)**

not determined (not applicable)

#### **S -phrase(s)**

none

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
Ammonium Sulfate	7783-20-2		No information	

**The product is classified in accordance with Annex VI to Directive 67/548/EEC**

#### **Indication of danger:**

None

## 16. OTHER INFORMATION

**Preparation Date:** 05/19/2015  
**Revision date** 4/8/2019  
**Prepared by:** Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**