# Ammonium sulfate SDS/MSDS (Safety Data Sheet)

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

* Product Name: Ammonium sulfate
* Catalog Number: E4018
* CAS Number: 7783-20-2
* IUPAC Name: Sulfuric acid ammonium salt (1: 2)

Relevant identified uses and uses advised against

* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

* Company: Selleck Chemicals
* TollFree: +1 877 796-6397
* Tel: +1 832 582-8158
* Fax: +1 832 582-8590

Emergency telephone number

* Emergency phone #: +1 832 582-8158

## 2. HAZARDS IDENTIFICATION

### 2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Acute toxicity (oral): Category 4. H302
Skin irritation: Category 2. H315
Serious eye irritation: Category 2. H319
Specific target organ toxicity (single exposure): Category 3. H335
Acute aquatic toxicity: Category 3. H402
Chronic aquatic toxicity: Category 3. H412

### 2.2 GHS Label elements, including precautionary statements

| | |
|---|---|
| **Hazard Pictogram(s)** |  |
| **Signal Word** | Warning |
| **Hazard statement(s)** | H302: Harmful if swallowed<br>H315: Causes skin irritation<br>H319: Causes serious eye irritation<br>H335: May cause respiratory irritation<br>H402: Harmful to aquatic life<br>H412: Harmful to aquatic life with long lasting effects |
| **Precautionary statement(s)** | None. |

| | |
|---|---|
| **Prevention** | P261: Avoid breathing dust/fume/gas/mist/vapors/spray.<br>P264: Wash hands thoroughly after handling.<br>P264+P265: Wash hands thoroughly after handling. Do not touch eyes.<br>P270: Do not eat, drink or smoke when using this product.<br>P271: Use only outdoors or in a well-ventilated area.<br>P273: Avoid release to the environment.<br>P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| **Response** | P301+P317: IF SWALLOWED: Get medical help.<br>P302+P352: IF ON SKIN: wash with plenty of water.<br>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.<br>P305+P351: IF IN EYES: Rinse cautiously with water for several minutes.<br>P319: Get medical help if you feel unwell.<br>P321: Specific treatment (see information on this label and safety datasheet)).<br>P330: Rinse mouth.<br>P332+P317: If skin irritation occurs: Get medical help.<br>P337+P317: If eye irritation persists: Get medical help.<br>P338: Remove contact lenses, if present and easy to do. Continue rinsing.<br>P362+P364: Take off contaminated clothing and wash it before reuse. |
| **Storage** | P403+P233: Store in a well-ventilated place. Keep container tightly closed.<br>P405: Store locked up. |
| **Disposal** | P501: P501 Dispose of contents/ container to an approved waste disposal plant. |

### 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Product name: Ammonium sulfate

CAS Number: 7783-20-2

PubChem CID: 6097028

Molecular formula: H8N2O4S

Molecular weight: 132.14 g/mol

IUPAC name: diazanium;sulfate

### 3.2 Mixtures

Not applicable (pure substance).

## 4. FIRST-AID MEASURES

### 4.1 Description of first aid measures

Inhalation: Move to fresh air. Keep at rest in a position comfortable for breathing. Seek medical attention if symptoms persist.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation develops.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention.

### 4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

### 4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO2), alcohol-resistant foam.

Unsuitable: None known.

### 5.2 Specific hazards arising from the substance or mixture

Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Wear self contained breathing apparatus for fire fighting if necessary.

The product itself does not burn.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

### 6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

### 6.3 Methods and materials for containment and cleaning up

SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

Accidental release measures. Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Avoid breathing dust.; Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.; Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Waste water containing ammonium sulfate and soluble metal sulfates is treated with calcium sulfide and calcium oxide and with ammonium sulfite and diammonium sulfite.

Waste diammonium sulfate which was obtained in the removal of sulfur dioxide from stack gases by absorption with ammonia solutions is reduced by bacteria to hydrogen sulfide and ammonium sulfate which is recycled to the absorption process.

SRP: Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in air, soil or water; effects on animal, aquatic and plant life; and conformance with environmental and public health regulations. If it is possible or reasonable use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination.

Product: Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: Dispose of as unused product.

Neutralize with soda ash or dilute hydrochloric acid.

Precautions for safe handling: Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

SRP: The scientific literature for the use of contact lenses by industrial workers is inconsistent. The benefits or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

SRP: Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. Ensure that the local ventilation moves the contaminant away from the worker.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

Store in a dry area separated from strong bases.

### 7.2 Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities: Keep container tightly closed in a dry and well-ventilated place.

Store in a dry area separated from strong bases.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

### 8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

8.2.4 Thermal hazards

Not applicable.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance: Ammonium sulfate is a white odorless solid. Sinks and dissolves in water. (USCG, 1999)

b) Odor: Odorless

c) Odor threshold: No data available

d) pH: pH = 5.5 (0.1 M aqueous solution)

e) Melting point/freezing point: 280 °C (decomposes)

f) Initial boiling point and boiling range: No data available

g) Flash point: No data available

h) Evaporation rate: No data available

i) Flammability (solid, gas): No data available

j) Upper/lower flammability or explosive limits: No data available

k) Vapor pressure: Vapor pressure of saturated solution: 0.901 kPa at 10 °C; 1.319 kPa at 15 °C; 1.871 kPa at 20 °C; 2.573 kPa at 25 °C; 3.439 kPa at 30 °C; 4.474 kPa at 35 °C

l) Vapor density: No data available

m) Relative density: 1.78 at 59 °F (USCG, 1999) - Denser than water; will sink

n) Water solubility: Freely soluble in water, insoluble in ethanol

o) Partition coefficient: n-octanol/water: Log P: No data available

p) Auto-ignition temperature: Not flammable (USCG, 1999)

q) Decomposition temperature: No data available

r) Viscosity: No data available

s) Explosive properties: No data available

t) Oxidizing properties: No data available

### 9.2 Other information

Topological Polar Surface Area (TPSA): 90.6 Å²

Complexity: 62

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

### 10.5 Incompatible materials

Incompatible materials: Strong oxidizing agents, strong bases.

The mixture of potassium chlorate with ammonium sulfate decomposes with incandescence when heated.

When a little ammonium sulfate is added to fused potassium nitrite, a vigorous reaction occurs attended by flame.

A mixture of ammonium sulfate and ammonium nitrate can easily be exploded by potassium or sodium-potassium alloy.

Reaction with sodium hypochlorite gives the unstable explosive nitrogen trichloride. Incompatible with (/potassium/ + /ammonium nitrate/), /potassium nitrite/, (NaK + /ammonium nitrate/).

### 10.6 Hazardous decomposition products

Thermal decomposition may produce: Nitrogen oxides (NOx), Sulfur oxides (SOx).

See also Section 5 (Fire-fighting measures) for combustion products.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity:**

No acute toxicity data available.

**Skin corrosion/irritation:**

Causes skin irritation (H315).

**Serious eye damage/eye irritation:**

Causes serious eye irritation (H319).

**Respiratory or skin sensitization:**

No data available.

**Germ cell mutagenicity:**

No data available.

**Carcinogenicity:**

No data available.

**Reproductive toxicity:**

No data available.

**Specific target organ toxicity (single exposure):**

No data available.

**Specific target organ toxicity (repeated exposure):**

No data available.

**Aspiration hazard:**

No data available.

### 11.2 Additional information

No additional toxicological information available.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

LC50; Species: Agonus cataphractus (hooknose); Conditions: static, 15 °C, pH 6.0-8.0; Concentration: 210 mg/L for 96 hr

LC50; Species: Alburnus alburnus (common bleak); Conditions: static, pH 7.8; Concentration: 310 mg/L for 96 hr

LC50; Species: Barbus ambassis (barb); Concentration: 566 mg/L for 24 hr /Conditions of bioassay not specified/

LC50; Species: Barbus ambassis (barb); Concentration: 546 mg/L for 48 hr /Conditions of bioassay not specified/

For more Ecotoxicity Values (Complete) data for Ammonium sulfate (76 total), please visit the HSDB record page.

/AQUATIC SPECIES/ Subchronic toxicity of composite inorganic fertilizers such as ammonium sulfate [fertilizer A; (NH(4))(2)SO(4); 21% NH(4)-N)], composite fertilizer 15-15-15 (fertilizer B; commercial formulation: 15% NH(4)-N, 15% phosphorus, and 15% potassium oxide), and composite fertilizer 25-5-10 (fertilizer C; commercial formulation: 25% NH(4)-N, 5% phosphorus, and 10% potassium oxide) on the skin, liver, kidney, pancreas, and gills of the juvenile rainbow trout (Oncorhynchus mykiss) was studied in two-week toxicity tests under static-renewal test conditions. Fish exposed to sublethal concentrations of fertilizers did not show any behavioral abnormality compared to control groups. Histological lesions were observed in skin, gills, liver, pancreas, and trunk kidney of the fish. In the epidermis, degenerated/vacuolated epithelial cells, microcystic dilatations, and intracellular edema of mucus cell were observed. Liv

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

No data available.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

### 12.6 Other adverse effects

This substance is classified as hazardous to the aquatic environment.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

## 14. TRANSPORT INFORMATION

### 14.1 UN number

UN 2506

### 14.2 UN proper shipping name

Ammonium hydrogen sulfate

### 14.3 Transport hazard class(es)

Consult official transport regulations (DOT/IATA/IMDG) for hazard classification.

IMO classification: Class 8

### 14.4 Packing group

Consult official transport regulations (DOT/IATA/IMDG) for packing group assignment.

### 14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

### 14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Registered (REACH Active)

**SARA 302 Components:**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:**

Acute (short-term) health hazard

Environmental hazard

**Massachusetts Right To Know Components:**

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

**Pennsylvania Right To Know Components:**

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

**New Jersey Right To Know Components:**

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

**California Prop. 65 Components:**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**Other regulatory listings:**

- The Australian Inventory of Industrial Chemicals: Chemical: Sulfuric acid, diammonium salt

- California Safe Cosmetics Program (CSCP) Reportable Ingredient: Hazard Traits - Respiratory Toxicity Authoritative List - OEHHA RELs Report - if used as a fragrance or flavor ingredient

- EFSA Legal Basis: Regulation (EC) No 1333/2008 (amended)

- Status Regulation (EC): 2004/129/EC

- FIFRA Requirements: Residues of ammonium sulfate are exempted from the requirement of a tolerance when used as a solid diluent or carrier in accordance with good agricultural practices as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops or to raw agricultural commodities aft

### 15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

## 16. OTHER INFORMATION

Revision Date: 2026/09/08

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.