

Ammonium Sulfate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Version: 1.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Ammonium Sulfate

Intended Use of the Product

Municipal and industrial water and wastewater treatment for disinfection as a source of ammonia in chloramination. Disinfection byproduct control.

Name, Address, and Telephone of the Responsible Party

Supplier 2

Emergency Telephone Number

Emergency number :

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Aquatic Acute 2 H401

Label Elements

GHS-US Labeling

Signal Word (GHS-US) : No labeling applicable

Hazard Statements (GHS-US) : H401 - Toxic to aquatic life

Precautionary Statements (GHS-US) : P273 - Avoid release to the environment
P501 - Dispose of contents/container according to local, regional, territorial, provincial, national, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Name	Product identifier	% (w/w)	Classification (GHS-US)
Ammonium sulfate	(CAS No) 7783-20-2	38 - 40	Aquatic Acute 2, H401
Citric acid	(CAS No) 77-92-9	0.04	Comb. Dust Eye Irrit. 2A, H319

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.

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Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: May cause respiratory irritation. Inhalation of decomposition products may cause pulmonary edema. Symptoms of respiratory complications may occur several hours after.

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Ammonia.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing vapor, mist, or spray.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Spills should be contained with mechanical barriers. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

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

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Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Chlorates. Nitrates. Nitrites.

Specific End Use(s)

Municipal and industrial water and wastewater treatment for disinfection as a source of ammonia in chloramination. Disinfection byproduct control.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH-approved respiratory protection should be worn.

Environmental Exposure Controls: Do not allow the product to be released into the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, faint yellow to amber colored
Odor	: Odorless
Odor Threshold	: Not available
pH	: 3 - 5
Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: Not applicable
Freezing Point	: -12 °C (10.4 °F)
Boiling Point	: Not available
Flash Point	: Not applicable
Auto-ignition Temperature	: Not applicable
Decomposition Temperature	: Ammonium sulfate: 235 °C (455 °F)
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not applicable
Upper Flammable Limit	: Not applicable
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Specific Gravity	: 1.216 - 1.228
Solubility	: Not available
Partition coefficient: n-octanol/water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

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SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Chlorates. Nitrates. Nitrites.

Hazardous Decomposition Products: Ammonia. Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified (pH: 3 - 5)

Serious Eye Damage/Irritation: Not classified (pH: 3 - 5)

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May cause respiratory irritation. Inhalation of decomposition products may cause pulmonary edema. Symptoms of respiratory complications may occur several hours after.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause eye irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Ammonium sulfate (7783-20-2)	
LD50 Oral Rat	> 2000 mg/kg
Citric acid (77-92-9)	
LD50 Oral Rat	5400 mg/kg
LD50 Dermal Rat	> 2000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

Ecology - Water: Toxic to aquatic life.

Ammonium sulfate (7783-20-2)	
LC50 Fish 1	5.2 (5.2 - 8.2) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	14 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	32.2 (32.2 - 41.9) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

Citric acid (77-92-9)	
LC50 Fish 1	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

Persistence and Degradability

Citric acid (77-92-9)	
Persistence and Degradability	Readily biodegradable in water.

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Bioaccumulative Potential

Ammonium sulfate (7783-20-2)	
Log Pow	-5.1 (at 25 °C)
Citric acid (77-92-9)	
Log Pow	-1.72 (at 20 °C)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

- 14.1 In Accordance with DOT** Not regulated for transport
- 14.2 In Accordance with IMDG** Not regulated for transport
- 14.3 In Accordance with IATA** Not regulated for transport
- 14.4 In Accordance with TDG** Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Ammonium sulfate (7783-20-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Citric acid (77-92-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Ammonium sulfate (7783-20-2)	
U.S. - Massachusetts - Right To Know List	
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List	
U.S. - Pennsylvania - RTK (Right to Know) List	

Canadian Regulations

Liquid Ammonium Sulfate	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Ammonium sulfate (7783-20-2)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Citric acid (77-92-9)	
Listed on the Canadian DSL (Domestic Substances List)	
Listed on the Canadian IDL (Ingredient Disclosure List)	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

- Revision date** : 05/01/15
- Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
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Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
H232	May form combustible dust concentrations in air
H319	Causes serious eye irritation
H401	Toxic to aquatic life

Party Responsible for the Preparation of This Document

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and its affiliates assume no responsibility. is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.

