

SECTION 1: Identification

1.1. Identification

Product form : Substance
 Substance name : ammonium sulfate
 CAS No : 7783-20-2
 Formula : (NH4)2SO4
 Synonyms : actamaster / ammonium sulfate(2:1) / ammonium sulphate / diammonium sulfate / dolamin / mascagnine / mascagnite / mascagnite, natural / sulfuric acid diammonium salt
 BIG no : 10683

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Dyestuff/pigment: production
 Fire extinguishing medium
 Fertilizer

1.3. Details of the supplier of the safety data sheet

Two Rivers Terminal
 3300 North Glade Road
 Pasco, Wa. 99302 - USA
 T 509-547-7776 - F 509-546-9508
www.tworiversterminal.com

1.4. Emergency telephone number

Emergency number : 24 Hour Emergency HAZMAT Response: (800) 229-5252; EPA National Response Center (800) 424-8802

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Hazardous to the aquatic environment - Acute Hazard Category 3 H402

Hazardous to the aquatic environment - Chronic Hazard Category 3 H412

Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling

Hazard statements (GHS-US) : H402 - Harmful to aquatic life
 H412 - Harmful to aquatic life with long lasting effects
 Precautionary statements (GHS-US) : P273 - Avoid release to the environment
 P501 - Dispose of contents/container to an approved waste disposal plant

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Name	Product identifier	%	Classification (GHS-US)
ammonium sulfate (Main constituent)	(CAS No) 7783-20-2	100	Aquatic Acute 3, H402 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

- Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the respiratory tract.
- Symptoms/injuries after skin contact : Red skin. Slight irritation.
- Symptoms/injuries after eye contact : Slight irritation.
- Symptoms/injuries after ingestion : Vomiting. Nausea. Diarrhoea.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Adapt extinguishing media to the environment.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
- Reactivity : Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, sulphur oxides). Reacts with (strong) oxidizers: (increased) risk of fire/explosion. Violent exothermic reaction with (some) bases: release of toxic and corrosive gases/vapours (ammonia, sulphur oxides).

5.3. Advice for firefighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit. See "Material-Handling" to select protective clothing. Note: Must be current in training for this product in order to respond to a spill.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8 Exposure controls/personal protection" .

6.2. Environmental precautions

Avoid release to the environment.

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6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray.
- Methods for cleaning up : Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8 : Exposure-controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.
- Incompatible products : Strong oxidizers. Strong bases.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. water/moisture.
- Storage area : Store in a dry area. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: paper. wood. textile. MATERIAL TO AVOID: copper. zinc. bronze.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Materials for protective clothing : GIVE GOOD RESISTANCE: butyl rubber. neoprene. PVC. GIVE LESS RESISTANCE: polyethylene. styrene-butadiene rubber. nitrile rubber/PVC.
- Hand protection : Gloves.
- Eye protection : Safety glasses. In case of dust production: protective goggles.
- Skin and body protection : Protective clothing.
- Respiratory protection : Wear approved mask.
- Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Crystalline solid. Powder.
- Color : Colourless-white Unpurified: grey-brown
- Odor : Odourless
- Odor threshold : No data available
- pH : 5.5 (1.3 %)
- pH solution : 1.3 %
- Melting point : 280 °C
- Freezing point : Not applicable

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Boiling point	: Not applicable
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: 1.8
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 1770 kg/m ³
Molecular mass	: 132.16 g/mol
Solubility	: Soluble in water. Water: 77 g/100ml
Log Pow	: -5.1
Auto-ignition temperature	: Not applicable
Decomposition temperature	: > 280 °C
Viscosity	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available

9.2. Other information

Minimum ignition energy	: Not applicable
SADT	: Not applicable
VOC content	: 0 %
Other properties	: Hygroscopic. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, sulphur oxides). Reacts with (strong) oxidizers: (increased) risk of fire/explosion. Violent exothermic reaction with (some) bases: release of toxic and corrosive gases/vapours (ammonia, sulphur oxides).

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong bases. Strong oxidizers.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

ammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg (Rat)
ATE US (oral)	2840.000 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 5.5 (1.3 %)

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Serious eye damage/irritation	: Not classified pH: 5.5 (1.3 %)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: AFTER INHALATION OF DUST: Dry/sore throat. Coughing. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the respiratory tract.
Symptoms/injuries after skin contact	: Red skin. Slight irritation.
Symptoms/injuries after eye contact	: Slight irritation.
Symptoms/injuries after ingestion	: Vomiting. Nausea. Diarrhoea.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Harmful to aquatic life with long lasting effects. Harmful to aquatic life.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Mild water pollutant (surface water). Maximum concentration in drinking water: 0.50 mg/l (ammonium) (Directive 98/83/EC); 250 mg/l (sulfate) (Directive 98/83/EC). Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (EC50: 100 - 1000 mg/l). May cause eutrophication. Insufficient data available on ecotoxicity.

ammonium sulfate (7783-20-2)	
LC50 fish 1	126 mg/l (96 h; <i>Poecilia reticulata</i>)
EC50 Daphnia 1	202 mg/l (96 h; <i>Daphnia magna</i>)
LC50 fish 2	250 - 480 mg/l (96 h; <i>Brachydanio rerio</i>)
EC50 Daphnia 2	433 mg/l (50 h; <i>Daphnia magna</i>)
TLM fish 1	1290 ppm (96 h; <i>Gambusia affinis</i>)

12.2. Persistence and degradability

ammonium sulfate (7783-20-2)	
Persistence and degradability	Biodegradability in water: no data available.

12.3. Bioaccumulative potential

ammonium sulfate (7783-20-2)	
Log Pow	-5.1
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Precipitate/make insoluble. Remove to an authorized dump. Do not discharge into surface water.
Additional information	: LWCA (the Netherlands): KGA category 05. Can be considered as non hazardous waste according to Directive 2008/98/EC.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

ammonium sulfate (7783-20-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION 16: Other information

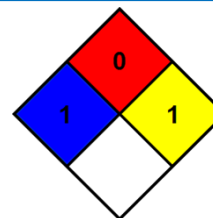
Full text of H-phrases:

H402	Harmful to aquatic life
H412	Harmful to aquatic life with long lasting effects

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 0 Minimal Hazard - No significant risk to health

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

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