

SECTION 1: Identification**1.1. Identification**

Product form : Mixture
Product name : AMS Solution / 8-0-0-13S Liquid Fertilizer

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Agricultural application

1.3. Supplier**Manufacturer**

MacroSource, LLC
7632 County Rd 101
Shakopee, MN 55379
T 651-726-1150
www.MacroSource.com

1.4. Emergency telephone number

Emergency number : CHEMTREC 1 (800) 424-9300

SECTION 2: Hazard(s) identification**2.1. Classification of the substance or mixture****GHS US classification**

Eye Irrit. 2A Causes serious eye irritation

2.2. GHS Label elements, including precautionary statements**GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
Hazard statements (GHS US) : Causes serious eye irritation
Precautionary statements (GHS US) : Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
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.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Water	CAS-No.: 7732-18-5	40 – 75
Diammonium sulfate	CAS-No.: 7783-20-2	28.2 - 34.4
Sulfurous acid, ammonium salt (1:1)	CAS-No.: 10192-30-0	11.3 - 13.9
Ammonium sulfite	CAS-No.: 10196-04-0	< 5
Ammonium thiosulfate	CAS-No.: 7783-18-8	2.0 - 2.5

Comments : This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from the supplier. All concentrations are in percent weight.

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists.

First-aid measures after eye contact : 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.

First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause irritation to the respiratory tract.

Symptoms/effects after skin contact : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Symptoms/effects after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

Unsuitable extinguishing media : Do not use water jet.

5.2. Specific hazards arising from the chemical

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon. Oxides of nitrogen. Ammonia. Hydrogen sulfide. Sulfur oxides. Irritating vapors.

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

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 : Read label before use. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs.

Hygiene measures : Wash contaminated clothing before reuse. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Keep dry. Keep cool. Avoid high temperatures.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8-0-0-13S Liquid Fertilizer

No additional information available

Diammonium sulfate (7783-20-2)

No additional information available

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Sulfurous acid, ammonium salt (1:1) (10192-30-0)

No additional information available

Ammonium sulfite (10196-04-0)

No additional information available

Ammonium thiosulfate (7783-18-8)

No additional information available

Water (7732-18-5)

No additional information available

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station. Provide readily accessible eye wash stations and safety showers.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear suitable gloves. Consult glove manufacturer's product information on material suitability and material thickness.

Eye protection:

Wear eye/face protection

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. SDSs cannot provide detailed and complete respiratory protection guidelines. Selection of respiratory protection must be done by a qualified person who has assessed the work environment.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Yellow
Odor	: Pungent
Odor threshold	: No data available
pH	: 5.5 (100%(m/v))
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 214 °F (760 mmHg (11013.25 hPa))
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: 1.2 68 °F

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Solubility	: Miscible in water.
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Carbon Steel. Copper and its alloys. Strong bases. Strong acids. Strong oxidizing agents.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Oxides of nitrogen. Hydrogen sulfide. Sulfur oxide. Ammonia. Irritating vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Diammonium sulfate (7783-20-2)	
LD50 oral rat	2840 mg/kg
LD50 dermal rat	> 2000 mg/kg
Ammonium sulfite (10196-04-0)	
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat	> 5.5 mg/l Animal: rat, Animal sex: male, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Ammonium thiosulfate (7783-18-8)	
LD50 oral rat	1950 mg/kg
LD50 dermal rabbit	> 2000 mg/kg body weight Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat	> 2.6 mg/l Animal: rat, Animal sex: male, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Water (7732-18-5)	
LD50 oral rat	> 90 ml/kg

Skin corrosion/irritation	: Not classified pH: 5.5 (100%(m/v))
Serious eye damage/irritation	: Causes serious eye irritation. pH: 5.5 (100%(m/v))
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Diammonium sulfate (7783-20-2)	
NOAEL (chronic,oral,animal/male,2 years)	256 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)
NOAEL (chronic,oral,animal/female,2 years)	284 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)

Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/effects after ingestion	: May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: May cause long-term adverse effects in the aquatic environment.
-------------------	-------------------------------------------------------------------

Diammonium sulfate (7783-20-2)	
LC50 - Fish [1]	250 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 - Crustacea [1]	14 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Other aquatic organisms [1]	121.7 mg/l Test organisms (species): other:
LC50 - Fish [2]	480 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [flow-through])
EC50 - Crustacea [2]	169 mg/l Test organisms (species): Daphnia magna

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Ammonium sulfite (10196-04-0)	
LC50 - Fish [1]	464 – 1000 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	89 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	43.8 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC (chronic)	> 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	≥ 316 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) Duration: '34 d'

Ammonium thiosulfate (7783-18-8)	
EC50 - Crustacea [1]	230 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
NOEC (chronic)	> 10 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	≥ 316 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) Duration: '34 d'

12.2. Persistence and degradability

8-0-0-13S Liquid Fertilizer	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

8-0-0-13S Liquid Fertilizer	
Bioaccumulative potential	Not established.

Diammonium sulfate (7783-20-2)	
Partition coefficient n-octanol/water	-5.1 (at 25 °C)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not regulated for transport

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

DOT
No data available

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Diammonium sulfate	7783-20-2	Present	Active	
Sulfurous acid, ammonium salt (1:1)	10192-30-0	Present	Active	
Ammonium sulfite	10196-04-0	Present	Active	
Ammonium thiosulfate	7783-18-8	Present	Active	
Water	7732-18-5	Present	Active	

Sulfurous acid, ammonium salt (1:1) (10192-30-0)

CERCLA RQ	5000 lb
-----------	---------

Ammonium sulfite (10196-04-0)

CERCLA RQ	5000 lb
-----------	---------

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

AMS Solution / 8-0-0-13S Liquid Fertilizer

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Component	State or local regulations
Diammonium sulfate (7783-20-2)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Sulfurous acid, ammonium salt (1:1) (10192-30-0)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Ammonium sulfite (10196-04-0)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Ammonium thiosulfate (7783-18-8)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

The mixture is subject to reporting under SARA Section 313:

- For aqueous ammonia compounds due to the presence of ammonium compounds: 1.0 % de minimis concentration (10% of total aqueous ammonia is reportable under this listing)
- For nitrate compounds due to the presence of ammonium nitrate

SECTION 16: Other information

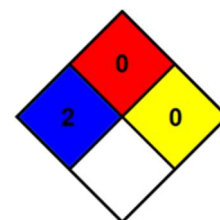
according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Issue date : 03/17/2023
Revision date : 03/17/2023
Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com



Full text of H-phrases	
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS Rating
Health : 2 Moderate Hazard - Temporary or minor injury may occur
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.

Safety Data Sheet (SDS), USA

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.