



Safety Data Sheet

1. Identification

Product identifier CHS Liquid AMS
Other means of identification Liquid Ammonium Sulfate Fertilizer.
Synonyms Water Treatment. Buffer Solution.
Recommended use Herbicide Adjuvant.
Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor Information

Company name CHS
Address 5500 Cenex Drive
Inver Grove Heights, MN 55077 US
Telephone 1.651.355.6000
Website www.chsinc.com
Contact person EH&S/Regulatory Department
Emergency phone number CHEMTREC (24 hours): 1-800-424-9300

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Not classified.
OSHA defined hazards Not classified.

Label elements

Hazard symbol None.
Signal word None.
Hazard statement None.

Precautionary statement

Prevention Observe good industrial hygiene practices.
Response Get medical attention/advice if you feel unwell.
Storage Store away from incompatible material.
Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information
Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Ammonium Sulfate	7783-20-2	15 – 40
Other components below reportable levels		60 - 100



Safety Data Sheet

Composition comments

All concentrations are in weight unless ingredient is a gas. Gas concentrations are in percent by volume.

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 supplier.

4. First-aid measures

Eye contact

Check for and remove contact lenses. Flush immediately with copious amounts of water or normal saline (minimum of 15 minutes), holding eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Take exposed individual to a health care professional, preferably an ophthalmologist, for further evaluation.

Skin contact

Remove contaminated clothing, shoes and equipment. Wash exposed area with plenty of soap and water. Repeat washing. If redness or irritation occurs, seek medical attention. Wash contaminated clothing before reuse.

Inhalation

Remove victim from immediate source of exposure and assure that the victim is breathing. If necessary, remove victim to fresh air and loosen clothing. Get medical attention.

Ingestion

Rinse mouth thoroughly. Drink 1 or 2 glasses of water. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention.

Most important symptoms/effects, acute and delayed

May cause abdominal discomfort if swallowed.

Indication of immediate medical attention and special treatment needed

Treat symptomatically.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

Product will not burn.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires. Selection of respiratory protection for firefighting follow the general fire precautions indicated in the workplace.

Fire-fighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from the fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid inhalation of vapors and spray mist and contact with skin and eyes. Wear suitable protective clothing. For personal protection see Section 8 of the SDS.



Safety Data Sheet

Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Do not allow to enter drains, sewers or watercourses.

7. Handling and storage

Precautions for safe handling

Avoid inhalation of vapors/spray and contact with skin and eyes. Use only with adequate ventilation. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a cool, dry well-ventilated place. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Follow standard monitoring procedures.

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and mists.

Individual protection measures such as personal protective equipment

Eye/face protection

Wear approved safety glasses or goggles.

Skin Protection

Hand protection

Chemical resistant gloves are recommended. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other

Wear appropriate clothing to prevent repeated or prolonged skin contact.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear air supplied respiratory protection if exposure concentrations are unknown. In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment.

In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134 and ANSI Z88.2.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene consideration

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice.



Safety Data Sheet

9. Physical and chemical properties

Appearance	
Physical State	Liquid.
Form	Liquid.
Color	Colorless to light yellow.
Odor	Bland.
Odor threshold	Not available.
pH	6 - 7
Melting point/freezing point	Not available.
Initial boiling point and boiling range	219.2°F (104°C) estimated
Flash point	Not available.
Evaporation Rate	Not available.
Flammability (solid, gas)	Not available.
Vapor pressure	Not available.
Vapor Density (Air=1)	Not available.
Relative density	1.17 – 1.19 @ 20°C (68°F)
Water Solubility	100%
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	66% estimated.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	None under normal conditions.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Ammonia fumes may be released upon heating.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and malaise.
Inhalation	Vapors and spray mist may irritate throat and respiratory system and cause coughing.
Skin contact	Prolonged or repeated skin contact may cause irritation.
Eye contact	May cause eye irritation on direct contact.

Symptoms related to the physical, chemical and toxicological characteristics May cause skin irritation on prolonged or repeated contact.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Component	Species	Test Results
Ammonium sulfate (CAS 7783-20-2)		
Acute Oral LD50	Rat	2840 mg/kg

CHS Liquid AMS



Safety Data Sheet

Inhalation
LC50

Rat

> 1000 mg/m³, 8 hours

Skin corrosion/irritation	Prolonged exposure may cause skin irritation.
Serious eye damage/eye irritation	May cause eye irritation on direct contact.
Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No data available.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
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	Not classified.
Chronic effects	Prolonged exposure may cause chronic effects.
Further information	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

<u>Component</u>	<u>Species</u>	<u>Test Results</u>
Ammonium sulfate (CAS 7783-20-2) Fish LC50	Salmo gairdneri	173 mg/l, 96 hours
Aquatic Algae EC50	Chlorella vulgaris	2700 mg/l, 18 days
Crustacea EC50	Water flea (Daphnia magna)	> 100 mg/l, 96 hours

Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	This product is water soluble and may disperse in soil.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.



Safety Data Sheet

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT Not regulated as dangerous goods.
IATA Not regulated as a dangerous goods.
IMDG Not regulated as a dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.
CERCLA Hazardous Substance List (40 CFR 302.4)
Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)
Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK – Substance List
Ammonium sulfate (CAS 7783-20-2)
US. New Jersey Worker and Community Right-to-Know Act
Not listed.



Safety Data Sheet

US. Pennsylvania RTK – Hazardous Substances

Ammonium sulfate (CAS 7783-20-2)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

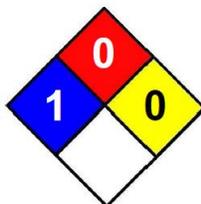
*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision**Issue date** 1-Feb-2016**Revision date** --**Version #** v1.0 SDS

HMIS® ratings

Health: 1
 Flammability: 0
 Physical hazard: 0

NFPA Ratings

List of abbreviations

EC50: Effective concentration, 50%.
 LC50: Lethal concentration, 50%.

References

EPA: Acquire database
 ACGIH
 NLM: Hazardous Substances Data Base
 US. IARC Monographs on Occupational Exposures to Chemical Agents
 HSDB® – Hazardous Substances Data Bank
 IARC Monographs. Overall Evaluation of Carcinogenicity
 National Toxicology Program (NTP) Report on Carcinogens
 ACGIH Documentation of the Threshold Limit Value and Biological Exposure Indices

Preparation The preparation of this MSDS was in accordance with ANSI Z400.1-2010.

Disclaimer

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