



Safety Data Sheet

Classified According to OSHA Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Product Identifier

Trade Name or Designation: Ammonium Sulfide TS

Product Number: R0694600

Other Identifying Product Numbers: R0694600-120C, R0694600-1C, R0694600-500C

1.2. Recommended Use and Restrictions on Use

General Laboratory Reagent

1.3. Details of the Supplier of the Safety Data Sheet

Company: Ricca Chemical Company

Address: 448 West Fork Drive

Arlington, TX 76012 USA

Telephone: 888-467-4222

1.4. Emergency Telephone Number (24 hours)

CHEMTREC (USA)

800-424-9300

CHEMTREC (International)

1+ 703-527-3887

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SECTION 2: Hazard(s) Identification

2.1. Classification of the Substance or Mixture

For the full text of the Hazard and Precautionary Statements listed below, see Section 16.

Hazard Class	Category	Hazard Statements	Precautionary Statements:
Acute Toxicity - Inhalation	Category 3	H331	P261, P271, P304+P340, P311, P321, P403+P233, P405, P501
Skin Corrosion / Irritation	Category 1	H314	P260, P264, P280, P301+P330+P331, P303+P361+P353, P363, P304+P340, P310, P321, P305+P351+P338, P405, P501
Eye Damage / Irritation	Category 1	H318	P280, P305+P351+P338, P310
Flammable Liquids	Category 2	H225	P210, P233, P240, P241, P242, P243, P280, P303+P361+P353, P370+P378, P403+P235, P501
Hazardous to the Aquatic Environment (Acute)	Category 2	H401	P273, P501

2.2. GHS Label Elements

Pictograms:



Signal Word: **Danger**

Hazard Statements:

Hazard Number	Hazard Statement
H225	Highly flammable liquid and vapor.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H401	Toxic to aquatic life.

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Precautionary Statements:

Precautionary Number	Precautionary Statement
P210	Keep away from heat, sparks and open flame. No smoking.
P233	Keep container tightly closed.
P240	Ground container and receiving equipment.
P241	Use explosion-proof equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe fumes, mist, vapors, or spray.
P261	Avoid breathing fumes, mist, vapors, or spray.
P264	Wash arms, hands and face thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or physician.
P311	Call a POISON CENTER or physician.
P321	Specific treatment (Wash areas of contact with water immediately).
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents in accordance with local, state, federal and international regulations.

2.4. Hazards not Otherwise Classified or Covered by GHS

Data not available.

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SECTION 3: Composition / Information on Ingredients

3.1. Components of Substance or Mixture

Chemical Name	Formula	Molecular Weight	CAS Number	Weight%
Water	H ₂ O	18.01 g/mol	7732-18-5	79.20
Hydrogen Sulfide	H ₂ S	34.08 g/mol	7783-06-4	11.34
Ammonium Hydroxide	NH ₄ OH	35.04 g/mol	1336-21-6	9.47

SECTION 4: First-Aid Measures

4.1. General First Aid Information

Eye Contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. May cause irritation, redness, pain, and tearing.

Inhalation: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Skin Contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. May cause irritation, redness, and pain.

Ingestion: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Dilute with water or milk. Vomiting may occur spontaneously but do not induce. Call a physician immediately.

4.2. Most Important Symptoms and Effects, Acute and Delayed

Causes severe skin burns and eye damage. Causes serious eye damage. Toxic if inhaled. WARNING! Corrosive, toxic and flammable. Use with adequate ventilation. Avoid breathing vapor. Avoid contact with skin, eyes or clothing. If ingested, give large quantity of water and call a physician. Do not induce vomiting. Wash areas of contact with plenty of water. For eyes, get medical attention. EYE CONTACT: May cause irritation, redness, pain, and tearing. SKIN CONTACT: May cause irritation, redness, and pain.

4.3. Medical Attention or Special Treatment Needed

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Irrigate immediately with large quantity of water for at least 15 minutes. Call a physician if irritation develops. Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Wash areas of contact with soap and water for at least 15 minutes. Call a physician if irritation develops. Dilute with water or milk. Vomiting may occur spontaneously but do not induce. Call a physician immediately.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

In case of fire: Use dry chemical, foam or carbon dioxide to extinguish. Water spray, dry chemical, alcohol foam, carbon dioxide

5.2. Specific Hazards Arising from the Substance or Mixture

Highly flammable liquid and vapor. Flammable gas. Forms explosive mixtures with air over wide range. Combustion produces irritants and toxic gases, including sulfur dioxide.

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5.3. Special Protective Equipment for Firefighters

Wear special protective clothing and positive pressure self-contained breathing apparatus.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Ground container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves and eye protection.

6.2. Cleanup and Containment Methods and Materials

Eliminate all ignition sources. Approach the release from upwind. Stop or control the leak, if this can be done without undue risk. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures. Control runoff and isolate discharged material for proper disposal.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Do not mix with acids. Keep well closed and protected from light.

SECTION 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Ammonium Hydroxide (1336-21-6)	TWA	USA	50 ppm TWA; 35 mg/m ³ TWA	U.S. - OSHA - Final PELs - Time Weighted Averages (TWAs)
Ammonium Hydroxide (1336-21-6)	TLV-STEL	USA	35 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Ammonium Hydroxide (1336-21-6)	TLV-TWA	USA	25 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrogen Sulfide (7783-06-4)	TLV-STEL	USA	5 ppm STEL	ACGIH - Threshold Limit Values - Short Term Exposure Limits (TLV-STEL)
Hydrogen Sulfide (7783-06-4)	TLV-TWA	USA	1 ppm TWA	ACGIH - Threshold Limit Values - Time Weighted Averages (TLV-TWA)
Hydrogen Sulfide (7783-06-4)	PEL-Ceiling	USA	20 ppm Ceiling	U.S. - OSHA - Final PELs - Ceiling Limits



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8.2. Exposure Controls

Engineering Controls: Use only outdoors or in a well-ventilated area. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limit.

Respiratory Protection: If the TLV is exceeded, a full-face chemical cartridge respirator may be worn up to 50 times the TLV or the maximum use concentration specified by the respirator supplier, whichever is less.

Skin Protection: Wear protective gloves and eye protection. Chemical resistant gloves.

Eye Protection: Wear protective gloves and eye protection. Safety glasses or goggles.

8.3. Personal Protective Equipment

Wear protective gloves and eye protection. If the TLV is exceeded, a full-face chemical cartridge respirator may be worn up to 50 times the TLV or the maximum use concentration specified by the respirator supplier, whichever is less. Chemical resistant gloves. Safety glasses or goggles.

SECTION 9: Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

Appearance: Yellow liquid

Physical State: Liquid

Odor: Data not available.

Odor Threshold: Data not available.

pH: 9.5 (45% solution of Ammonium Sulfide)

Melting/Freezing Point: Data not available.

Initial Boiling Point/Range: Data not available.

Flash Point: 60°C (140°F) (20-24% Ammonium Sulfide)

Evaporation Rate: Data not available.

Flammability: Data not available.

Flammability/Explosive Limits: Data not available.

Vapor Pressure: Data not available.

Vapor Density: Data not available.

Relative Density: Data not available.

Solubility: Miscible

Partition Coefficient: Data not available.

Auto-Ignition Temperature: Data not available.

Decomposition Temperature: Data not available.

Viscosity: Data not available.

Explosive Properties: Data not available.

Oxidizing Properties: Data not available.



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SECTION 10: Stability and Reactivity

10.1. Reactivity and Chemical Stability

Stable under normal conditions of use and storage.

10.2. Possibility of Hazardous Reactions

Data not available.

10.3. Conditions to Avoid and Incompatible Materials

Keep away from heat, sparks and open flame. No smoking. Keep container tightly closed. Contact with acids may evolve hydrogen sulfide. Oxidizers, zinc. Corrodes copper, zinc and their alloys.

10.4. Hazardous Decomposition Products

Will not occur.

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure:

Not applicable.

Acute Toxicity - Dermal Exposure:

Not applicable.

Acute Toxicity - Inhalation Exposure:

Toxic if inhaled. Avoid breathing fumes, mist, vapors, or spray. Use only outdoors or in a well-ventilated area. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.

Acute Toxicity - Other Information:

LC50, Inhalation, Rat: 444 ppm (Hydrogen Sulfide), respiratory, gastrointestinal and bladder effects noted. LCLo, Inhalation, Human: (Hydrogen Sulfide) 800 ppm/5 M, details of toxic effects not reported other than lethal dose value. Odor is perceptible at concentrations of 0.02 - 0.13 ppm. LD50, Oral, Rat: 350 mg/kg (Ammonium Hydroxide), gastrointestinal, liver, kidney, ureter, bladder changes. LDLo, Oral, Human: 43 mg/kg; LCLo, Inhalation, Human: 5000 ppm, details of toxic effects not reported other than lethal dose value. No LD50 information available for Ammonium Sulfide.

Skin Corrosion and Irritation:

Causes severe skin burns and eye damage. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.



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Serious Eye Damage and Irritation:

Causes serious eye damage. Wear protective gloves and eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Respiratory Sensitization:

Not applicable.

Skin Sensitization:

Not applicable.

Germ Cell Mutagenicity:

Not applicable.

Carcinogenicity:

Not applicable.

Reproductive Toxicity:

Not applicable.

Specific Target Organ Toxicity from Single Exposure:

Not applicable.

Specific Target Organ Toxicity from Repeated Exposure:

Not applicable.

Aspiration Hazard:

Not applicable.

Additional Toxicology Information:

Data not available.

SECTION 12: Ecological Information

12.1. Ecotoxicity

Toxic to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

12.2. Persistence and Degradability

Data not available.

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in Soil

Data not available.

12.5. Other Adverse Ecological Effects

Data not available.

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SECTION 13: Disposal Considerations

13.1. Waste Treatment Methods

Data not available.

SECTION 14: Transportation Information

14.1. Transportation by Land-Department of Transportation (DOT, United States of America)

Sizes: 1 L, 120 mL, 500 mL

UN Number: UN2683

Proper Shipping Name: Ammonium Sulphide solution

Hazard Class: 8 (6.1,3)

Packing Group: II

Hazard Label(s):



14.2. Transportation by Air - International Air Transport Association (IATA)

Sizes: 1 L, 120 mL, 500 mL

UN Number: UN2683

Proper Shipping Name: Ammonium Sulphide solution

Hazard Class: 8 (3, 6.1)

Packing Group: II

Hazard Label(s):



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14.3 Transportation of Dangerous Goods (TDG, Canada)

Sizes: 1 L, 120 mL, 500 mL

UN Number: UN2683

Proper Shipping Name: AMMONIUM SULPHIDE SOLUTION

Hazard Class: 8 (6.1,3)

Packing Group: II

Hazard Label(s):



SECTION 15: Regulatory Information

15.1. Occupational Safety and Health Administration (OSHA) Hazards

Not listed.

15.2. Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

Ammonium Hydroxide (CAS # 1336-21-6): 100 lb EPCRA RQ

Ammonium Hydroxide (CAS # 1336-21-6): 500 lb TPQ

Hydrogen Sulfide (CAS # 7783-06-4): 100 lb EPCRA RQ

Hydrogen Sulfide (CAS # 7783-06-4): 500 lb TPQ

15.3. Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Ammonium Hydroxide (CAS # 1336-21-6): 100 lb final RQ; 45.4 kg final RQ

Ammonium Hydroxide (CAS # 1336-21-6): 1000 lb final RQ; 454 kg final RQ

Hydrogen Sulfide (CAS # 7783-06-4): 100 lb final RQ; 45.4 kg final RQ

15.4. Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

Ammonium Hydroxide (CAS # 1336-21-6): "1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)" As Aqueous ammonia from water dissociable ammonium salts and other sources [RR-47925-4]

Ammonium Hydroxide (CAS # 1336-21-6): 1.0 % de minimis concentration (10% of total aqueous Ammonia is reportable under this listing)

Ammonium Hydroxide (CAS # 1336-21-6): 1.0 % de minimis concentration (includes anhydrous Ammonia and aqueous Ammonia from water dissociable Ammonium salts and other sources, 10% of total aqueous Ammonia is reportable under this listing)

Hydrogen Sulfide (CAS # 7783-06-4): 1.0 % de minimis concentration

15.5. Massachusetts Right-to-Know Substance List

Ammonium Hydroxide (CAS # 1336-21-6): Extraordinarily hazardous (including anhydrous)

Ammonium Hydroxide (CAS # 1336-21-6): Present

Hydrogen Sulfide (CAS # 7783-06-4): Extraordinarily hazardous

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15.6. Pennsylvania Right-to-Know Hazardous Substances

Ammonium Hydroxide (CAS # 1336-21-6): Environmental hazard
Ammonium Hydroxide (CAS # 1336-21-6): Present
Water (CAS # 7732-18-5): "Present" As Ethyl alcohol and water [RR-00802-6]
Water (CAS # 7732-18-5): Present
Hydrogen Sulfide (CAS # 7783-06-4): Environmental hazard
Hydrogen Sulfide (CAS # 7783-06-4): Present

15.7. New Jersey Worker and Community Right-to-Know Components

Ammonium Hydroxide (CAS # 1336-21-6): corrosive
Ammonium Hydroxide (CAS # 1336-21-6): sn 0084
Ammonium Hydroxide (CAS # 1336-21-6): SN 0084 500 lb TPQ (The reportable quantity for anhydrous Ammonia is based on 100% of the anhydrous Ammonia. The reportable quantity for aqueous Ammonia is the Ammonia equivalent weight for concentrations of $\geq 20\%$.)
Ammonium Hydroxide (CAS # 1336-21-6): sn 0103
Hydrogen Sulfide (CAS # 7783-06-4): flammable - fourth degree
Hydrogen Sulfide (CAS # 7783-06-4): sn 1017
Hydrogen Sulfide (CAS # 7783-06-4): SN 1017 500 lb TPQ

15.8. California Proposition 65

Not listed.

15.9. Canada Domestic Substances List / Non-Domestic Substances List (DSL/NDSL)

Ammonium Hydroxide (CAS # 1336-21-6): Present (DSL)
Water (CAS # 7732-18-5): Present (DSL)
Hydrogen Sulfide (CAS # 7783-06-4): Present (DSL)

15.10. United States of America Toxic Substances Control Act (TSCA) List

All components of this solution are listed as active on the TSCA Inventory or are mixtures (hydrates) of active items listed on the TSCA Inventory.

Ammonium Hydroxide (CAS # 1336-21-6): Present (ACTIVE)
Water (CAS # 7732-18-5): Present (ACTIVE)
Hydrogen Sulfide (CAS # 7783-06-4): Present (ACTIVE)

15.11. European Inventory of Existing Commercial Chemical Substances (EINECS), European List of Notified Chemical Substances (ELINCS), and No Longer Polymers (NLP)

Ammonium Hydroxide (CAS # 1336-21-6): 215-647-6
Ammonium Hydroxide (CAS # 1336-21-6): 231-635-3
Water (CAS # 7732-18-5): 231-791-2
Hydrogen Sulfide (CAS # 7783-06-4): 231-977-3

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SECTION 16: Other Information

16.1. Full Text of Hazard Statements and Precautionary Statements

Highly flammable liquid and vapor. Causes severe skin burns and eye damage. Toxic if inhaled. Toxic to aquatic life.

Keep away from heat, sparks and open flame. No smoking. Ground container and receiving equipment. Use explosion-proof equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe fumes, mist, vapors, or spray. Wash arms, hands and face thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves and eye protection.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water immediately). Wash contaminated clothing before reuse. In case of fire: Use dry chemical, foam or carbon dioxide to extinguish.

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Dispose of contents in accordance with local, state, federal and international regulations.

16.2. Miscellaneous Hazard Classes

Canadian Carcinogenicity Hazard Class: Not Applicable.

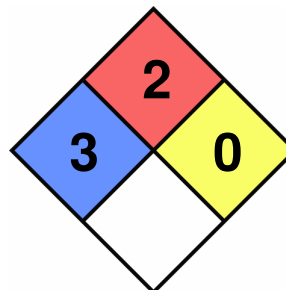
Physical Hazards Not Otherwise Classified (PHNOC): Not Applicable.

Health Hazards Not Otherwise Classified (HHNOC): Not Applicable.

Biohazardous Infectious Materials Hazard Class: Not Applicable.

16.3. National Fire Protection Association (NFPA) Rating

Health: 3
Flammability: 2
Reactivity: 0
Special Hazard:



16.4. Document Revision

Last Revision Date: 2023-09-11

DISCLAIMER

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.