



MATERIAL SAFETY DATA SHEET

AMMONIUM THIOSULFATE SOLUTION

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1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Ammonium Thiosulfate Solution

OTHER/GENERIC NAMES: Ammonium Thiosulfate, Aqueous Solution
Ammonium Hyposulfite Solution

PRODUCT USE: Industrial

SUPPLIER: Esseco USA LLC
Gatehall IV
4 Gatehall Drive
Parsippany, NJ 07054USA

FOR MORE INFORMATION CALL: 866-377-3261
(Monday-Friday, 9:00am-4:30pm)

FOR EMERGENCY IN USA, CALL CHEMTREC: 800-424-9300
(24 Hours/Day, 7 Days/Week)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Ammonium thiosulfate	7783-18-8	58
Water	7732-18-5	Balance

Trace impurities and additional material names not listed above may appear in Section 15 of this MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard Communication Standard.*

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Clear, colorless liquid with an ammonia odor which may irritate the skin, respiratory tract and gastrointestinal tract. May cause irritation and/or burns to the eyes. Reacts with acids to form toxic and irritating sulfur dioxide gas. Not flammable.

POTENTIAL HEALTH HAZARDS

SKIN: Irritation is possible from prolonged or repeated contact.

EYES: Irritation or burning is possible from contact with liquid. Mist may cause irritation or burning.

INHALATION: Inhalation of mist may irritate respiratory tract. If heated to the point where ammonia gas is driven off, this is highly irritating to the respiratory tract.

INGESTION: May irritate the gastrointestinal tract. Generally considered of low toxicity, poorly absorbed from the bowel.

DELAYED EFFECTS: None known.

Ingredients found on one of the three OSHA designated carcinogen lists are listed below.

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section.	----	----	----



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4. FIRST AID MEASURES

- SKIN:** Wash skin with plenty of water. Get medical attention if irritation persists.
- EYES:** Flush eyes immediately with water for at least 15 minutes. Get medical attention.
- INHALATION:** Promptly remove to fresh air. If breathing is difficult, give oxygen, provided a qualified operator is available. If symptoms persist, get medical attention.
- INGESTION:** If conscious, immediately give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Get medical attention.
- ADVICE TO PHYSICIAN:** Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT:	Not flammable
FLASH POINT METHOD:	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
UPPER FLAME LIMIT (volume % in air):	Not applicable
LOWER FLAME LIMIT (volume % in air):	Not applicable
FLAME PROPAGATION RATE (solids):	Not applicable
OSHA FLAMMABILITY CLASS:	Not applicable

EXTINGUISHING MEDIA:

Material is not flammable. Use water or extinguishing media appropriate for material in surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Ammonia gas is evolved on heating. If heated beyond dryness, some hydrogen sulfide gas may be given off. The flammable limits for ammonia in air are 16% to 25% by volume. Hydrogen sulfide will also burn.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Wear NIOSH-approved self-contained breathing apparatus to protect against any release of toxic and/or irritating fumes. Skin and eye protection should also be provided. Use water-spray to keep fire-exposed containers cool, and to knock down fumes.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: (See section 8 for recommended personal protective equipment.)

Dilute small spills or leaks cautiously with plenty of water, keeping away from incompatible materials. Dike up large spills with commercial or other convenient absorbent. Mop or pump into metal or plastic containers. Close containers and store for later disposal.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (See section 8 for recommended personal protective equipment.)

Avoid contact with skin, eyes and clothing. Use good personal hygiene and housekeeping. Wash thoroughly after handling.



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STORAGE RECOMMENDATIONS:

Store in a cool, well-ventilated area away from acids, alkalis and oxidizers. Keep containers out of the sun. Keep container closed with opening up to prevent leakage when not in use and protect from physical damage. Diking of storage tanks is recommended.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide local exhaust if misty conditions exist.

PERSONAL PROTECTIVE EQUIPMENT

SKIN PROTECTION:

For routine product handling or use, wear full work clothing, including long-sleeved shirt and trousers. Wear rubber gloves and apron for prolonged or repeated contact with liquid.

EYE PROTECTION:

Wear chemical safety goggles and hard hat (or other head covering). Do not wear contact lenses.

RESPIRATORY PROTECTION:

None generally required. If misty conditions exist, use a NIOSH-approved respirator for mist. If through heating, excessive ammonia gas is given off, use a chemical cartridge respirator with a cartridge specific for ammonia, or a NIOSH-approved self-contained breathing apparatus or supplied-air respirator. The TLV for ammonia is 25 ppm.

ADDITIONAL RECOMMENDATIONS: Eyewash and safety shower are recommended.

EXPOSURE GUIDELINES

INGREDIENT NAME

No ingredients listed in this section

ACGIH TLV

OSHA PEL

OTHER LIMIT

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

Ammonia: OSHA TWA = 50 ppm;
ACGIH TLV = 25 ppm;
ACGIH STEL = 35 ppm.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

Clear, colorless liquid.

PHYSICAL STATE:

Liquid.

MOLECULAR WEIGHT:

148.20 (anhydrous)

CHEMICAL FORMULA:

$(\text{NH}_4)_2\text{S}_2\text{O}_3 + \text{H}_2\text{O}$ (solution)

ODOR:

Ammonia odor

SPECIFIC GRAVITY (water = 1.0):

1.33 (anhydrous)

SOLUBILITY IN WATER (weight %):

Complete

pH:

Approx. 8

BOILING POINT:

>100C (boils with decomposition)

MELTING POINT:

Salt-out temperature is 3C

VAPOR PRESSURE:

Not applicable.

VAPOR DENSITY (air = 1.0):

Not applicable.

EVAPORATION RATE:

Not applicable.

COMPARED TO:

Not applicable.

% VOLATILES:

Not applicable.

FLASH POINT:

Not flammable.

(Flash point method and additional flammability data are found in Section 5.)



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10. STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):

Normally stable. Avoid - Heat: accelerates the normal evolution of ammonia. Heating to dryness and further: yields toxic hydrogen sulfide and other gases. Hydrogen sulfide also can burn.

INCOMPATIBILITIES:

Strong oxidizers such as nitrates and nitrites: can cause explosions, particularly if heated to dryness.

Water-reactive materials such as oleum: causes strong exothermic reaction.

Acids: causes evolution of sulfur dioxide gas, which is toxic, corrosive, and an oxidizer.

Alkalies: accelerates the normal evolution of ammonia.

HAZARDOUS DECOMPOSITION PRODUCTS:

Ammonia under normal and heated conditions. Ammonia is toxic, corrosive and chemically reactive.

Overheating of the evaporation residue yields ammonia, hydrogen sulfide, nitrogen oxide gases and sulfur oxide gases. These are toxic and corrosive. Ammonia and hydrogen sulfide can burn. The oxides are also oxidizers.

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

LD₅₀ (oral-rat): 2890 mg/kg

LC₅₀ (inhl-rat): >2260 mg/m³/4 hr

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Data not available.

OTHER DATA:

None.

12. ECOLOGICAL INFORMATION

Effect of low concentrations on aquatic life is unknown.

BOD: 0.62 lb/lb, 5 days

13. DISPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? No

If yes, the RCRA ID number is: Not applicable.

OTHER DISPOSAL CONSIDERATIONS:

Dispose of in accordance with applicable Federal, State and Local regulations.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.



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14. TRANSPORT INFORMATION

US DOT HAZARD CLASS: Not regulated.
US DOT ID NUMBER: Not applicable.
PROPER SHIPPING NAME: Not applicable.

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS: Listed on TSCA Inventory of Chemical Substances.
OTHER TSCA ISSUES: None.

SARA TITLE III/CERCLA

"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

<u>INGREDIENT NAME</u>	<u>SARA/CERCLA RQ (lb)</u>	<u>SARA EHS TPQ (lb)</u>
No ingredients listed in this section.	----	----

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Immediate.

SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements. CAS numbers and weight percents are found in Section 2.

<u>INGREDIENT NAME</u>	<u>COMMENT</u>
No ingredients listed in this section.	----

STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

<u>INGREDIENT NAME</u>	<u>WEIGHT %</u>	<u>COMMENT</u>
No ingredients listed in this section.	----	----

ADDITIONAL REGULATORY INFORMATION:

None.

WHMIS CLASSIFICATION (CANADA):

D2B

FOREIGN CHEMICAL CONTROL INVENTORY STATUS:

Listed on Canadian DSL and EU EINECS.



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16. OTHER INFORMATION

CURRENT ISSUE DATE: September, 2004
PREVIOUS ISSUE DATE: April, 2003

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING:
Change in company name.

OTHER INFORMATION: This product is not for food or drug use.

The information in this Material Safety Data Sheet is believed to be accurate and reliable as of the date issued. Esseco USA makes no warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose or course of performance or usage of trade. Accordingly, Esseco USA will not be responsible for damages resulting from use of or reliance upon this information. The user is responsible for determining whether the Esseco USA product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application on an Esseco USA product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the Esseco USA product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.