

1. Identification

Product identifier Ammonium Thiosulfate solution
Other means of identification Not available.
Synonyms Ammonium thiosulfate*ATS*Ammonium hyposulfite*12-0-0-26S
Recommended use Fertilizer.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor Information

Company name Gavilon Fertilizer, LLC
Address 5 Skidaway Village Walk
 Savannah, GA 31411 US

Telephone 1-912-598-8392
Website www.gavilon.com
Contact person EH&S/Regulatory Department
Emergency phone number CHEMTREC (24 hours): 1-800-424-3900

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 The mixture does not meet the criteria for classification.
Precautionary statement
Prevention Observe good industrial hygiene practices.
Response Wash hands after handling.
Storage Store away from incompatible material.
Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) Not classified.

Supplemental information
 Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Ammonium thiosulfate	7783-18-8	40 - 70
Water	7732-18-5	30 - 60
Ammonium hydroxide	1336-21-6	0.1 - 1
Ammonium sulfate	7783-20-2	0.1 - 1

Composition comments

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

The 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 irritation 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

No adverse effects anticipated. 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

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

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**

Water fog. Water spray. Carbon dioxide (CO₂). Foam.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Heating may cause the release of ammonia vapors. 3 (16-25%) may form flammable mixtures with air. If heated beyond dryness, some hydrogen sulfide gas may be given off.

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.

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****US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

<u>Decomposition</u>	<u>Type</u>	<u>Value</u>
Ammonia (CAS 7664-41-7)	PEL	35 mg/m ³ 50 ppm

US ACGIH Threshold Limit Values

<u>Decomposition</u>	<u>Type</u>	<u>Value</u>
Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

<u>Decomposition</u>	<u>Type</u>	<u>Value</u>
Ammonia (CAS 7664-41-7)	TWA	18 mg/m ³ 25 ppm

US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

<u>Decomposition</u>	<u>Type</u>	<u>Value</u>
Ammonia (CAS 7664-41-7)	STEL	27 mg/m ³ 35 ppm

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.

9. Physical and chemical properties

Appearance	White liquid.
Physical State	Liquid.
Form	Liquid.
Color	White.
Odor	Slight ammonia.
Odor threshold	Not available.
pH	8
Melting point/freezing point	23°F (-5°C)
Initial boiling point and boiling range	Not available.
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	1.325 @ 70°F
Solubility	Completely miscible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Viscosity	Not available.
Other information	
Percent volatile	1 %

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.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat. Extreme temperatures.
Incompatible materials	Strong oxidizing agents. Acids. Alkalies. Zinc. Water reactive materials.
Hazardous decomposition products	Ammonia. Sulfur oxides. Ammonium sulfate. Nitrogen oxides. Hydrogen sulfide.

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
Eye contact

Prolonged or repeated skin contact may cause irritation.
May cause eye irritation on direct contact.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects

Acute toxicity May cause discomfort if swallowed.

Components	Species	Test Results
Ammonium hydroxide (CAS 1336-21-6) Acute Oral LD50	Rat	350 mg/kg
Ammonium thiosulfate (CAS 7783-18-8) Acute Oral LD50	Rat	2890 mg/kg

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 No data available.

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 No data available.

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.

Components	Species	Test Results
Ammonium hydroxide (CAS 1336-21-6) Aquatic Crustacea LC50	Daphnia magna	0.66 mg/L, 48 hours
Ammonium thiosulfate (CAS 7783-18-8) 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.

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

14. Transport information

DOT Not regulated as a hazardous material by DOT.

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.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Ammonium hydroxide (CAS 1336-21-6) 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 No

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	%
Ammonium thiosulfate	7783-18-8	40 - 70
Ammonium hydroxide	1336-21-6	0.1 - 1
Ammonium sulfate	7783-20-2	0.1 - 1

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 hydroxide (CAS 1336-21-6)

Ammonium sulfate (CAS 7783-20-2)

Ammonium thiosulfate (CAS 7783-18-8)

US New Jersey Worker and Community Right-to-Know Act

Not regulated.

US Pennsylvania RTK – Hazardous Substances

Ammonium hydroxide (CAS 1336-21-6)

Ammonium sulfate (CAS 7783-20-2)

Ammonium thiosulfate (CAS 7783-18-8)

US Rhode Island RTK

Ammonium hydroxide (CAS 1336-21-6)

US California Proposition 65**US – California Proposition 65 – Carcinogens & Reproductive Toxicity (CRT): Listed substances**

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act 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** 07-February-2014**Revision date** --**Version #** SDS**NFPA Ratings****References**

EPA: Acquire database
 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

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.