

**1. Identification**

<b>Product identifier</b>	<b>Ammonium Thiosulfate solution</b>
<b>Other means of identification</b>	
<b>SDS Number</b>	KF_ATS_US_EN
<b>Synonyms</b>	Ammonium thiosulfate * ATS * Ammonium hyposulfite * Thiosulfuric acid, diammonium salt * 11-0-0-24 * 12-0-0-26S
<b>Recommended use</b>	Fertilizer.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Company Name</b>	Koch Fertilizer, LLC 4111 E 37th Street North PO Box 2219 Wichita, KS, 67201-2219 kochmsds@kochind.com 1-316-828-7672
<b>Emergency</b>	For Chemical Emergency Call CHEMTREC day or night 1.800.424.9300 Mexico - 1.800.681.9531 Outside USA/Canada 1.703.527.3887 (collect calls accepted)

**2. Hazard(s) identification**

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>OSHA defined hazards</b>	Not classified.
<b>Label elements</b>	
<b>Hazard symbol</b>	None.
<b>Signal word</b>	None.
<b>Hazard statement</b>	The mixture does not meet the criteria for classification.
<b>Precautionary statement</b>	
<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash hands after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	Not applicable.

**3. Composition/information on ingredients****Mixtures**

<b>Chemical name</b>	<b>CAS number</b>	<b>%</b>
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 percent by 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

**Inhalation** Move person to fresh air. If the affected person is not breathing, apply artificial respiration. Get medical attention immediately.

**Skin contact** Immediately flush skin with plenty of water. Get medical attention if irritation develops and persists.

**Eye contact** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

**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 (CO<sub>2</sub>). 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. NH<sub>3</sub> (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 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 in 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)

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

#### US. ACGIH Threshold Limit Values

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

#### US. NIOSH: Pocket Guide to Chemical Hazards

Decomposition	Type	Value
Ammonia (CAS 7664-41-7)	STEL	27 mg/m <sup>3</sup> 35 ppm
	TWA	18 mg/m <sup>3</sup> 25 ppm

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	Follow standard monitoring procedures.
<b>Appropriate engineering controls</b>	Provide adequate general and local exhaust ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors and mists.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear approved safety glasses or goggles.
<b>Skin protection</b>	
<b>Hand protection</b>	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.
<b>Other</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	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.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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

<b>Appearance</b>	White liquid.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>Color</b>	White.
<b>Odor</b>	Slight ammonia.
<b>Odor threshold</b>	Not available.
<b>pH</b>	8
<b>Melting point/freezing point</b>	23 °F (-5 °C)
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.

**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** 1.325 @70°F

**Solubility(ies)**

**Solubility (water)** Completely soluble.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition 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 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. Alkalis. 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**

**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.

**Ingestion** Ingestion may cause irritation and malaise.

**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 or skin sensitization**

**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.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not listed.

**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)			
<b>Aquatic</b>			
Crustacea	LC50	Daphnia magna	0.66 mg/l, 48 hours
Ammonium sulfate (CAS 7783-20-2)			
Fish	LC50	Salmo gairdneri	173 mg/l, 96 hours
<b>Aquatic</b>			
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 dangerous goods.  
**IATA**  
Not regulated as dangerous goods.  
**IMDG**  
Not regulated as 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)**

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**

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Ammonia	7664-41-7	100	500		

**SARA 311/312 Hazardous chemical**  
 No

**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
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.

**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**

Ammonium hydroxide (CAS 1336-21-6)

**US. Pennsylvania Worker and Community Right-to-Know Law**

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**

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** 17-April-2015

**Revision date** -

**Version #** 01  
**Further information** HMIS® is a registered trade and service mark of the NPCA.  
**HMIS® ratings** Health: 1  
Flammability: 1  
Physical hazard: 0

**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 Values and Biological Exposure Indices

**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.