

1. Identification

Product identifier	Ammonium Thiosulphate Solution
Other means of identification	
Synonyms	Ammonium thiosulphate * ATS * Ammonium hyposulfite * Thiosulfuric acid, diammonium salt * 11-0-0-24S * 12-0-0-26S
Recommended use	Fertiliser.
Recommended restrictions	Uses other than the recommended use.
Manufacturer/Importer/Supplier/Distributor information	
Company name	Koch Fertilizer, LLC 4111 E 37th Street North PO Box 2219 Wichita, KS, 67201-2219 kochmsds@kochind.com 1-316-828-7672
Emergency	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 identification

Physical hazards	Not classified.	
Health hazards	Serious eye damage/eye irritation	Category 2A
Label elements		



Signal word	Warning	
Hazard statement	Causes serious eye irritation.	
Precautionary statement		
Prevention	Wash thoroughly after handling. Wear eye protection/face protection.	
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.	
Storage	Not assigned.	
Disposal	Not assigned.	
Supplemental information	None.	
Other hazards	None known.	

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

Chemical name	Common name and synonyms	CAS number	%
Ammonium thiosulphate		7783-18-8	40 - 70
Water		7732-18-5	30 - 60
Ammonium bisulfite		10192-30-0	1 - 5

Chemical name	CAS number	%
Ammonium sulfite	10196-04-0	1 - 5
Ammonium hydroxide	1336-21-6	< 2

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 to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
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. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Heating may cause the release of ammonia vapors. NH 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 must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	The product is soluble in water. 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. Following product recovery, flush area with water. Small Spills: Absorb spillage with suitable absorbent material. Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid contact with eyes. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage,
including any incompatibilities

Store in tightly closed container. Store away from incompatible materials (see section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	35 ppm
	TWA	25 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	24 mg/m3
		35 ppm
	TWA	17 mg/m3 25 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	35 ppm
	TWA	25 ppm

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act), as amended

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	35 ppm
	TWA	25 ppm

Canada. New Brunswick OELs: Threshold Limit Values (TLVs) Based on the 1991 and 1997 ACGIH TLVs and BEIs Publication (New Brunswick Regulation 91-191)

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	24 mg/m3
		35 ppm
	TWA	17 mg/m3 25 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	35 ppm
	TWA	25 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	STEL	24 mg/m3
		35 ppm
	TWA	17 mg/m3 25 ppm

Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21), as amended

Components	Type	Value
Ammonium hydroxide (CAS 1336-21-6)	15 minute	35 ppm

Components	Type	Value
	8 hour	25 ppm
Biological limit values	No biological exposure limits noted for the ingredient(s).	
Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.	
Individual protection measures, such as personal protective equipment		
Eye/face protection	Wear safety glasses with side shields (or goggles).	
Skin protection		
Hand protection	Wear appropriate chemical resistant gloves. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.	
Other	Wear suitable protective clothing.	
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.	
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.	
General hygiene considerations	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.	
9. Physical and chemical properties		
Appearance		
Physical state	Liquid.	
Form	Liquid.	
Colour	Colorless to pale yellow.	
Odour	Slight organic or ammonia.	
Odour threshold	Not available.	
pH	6.8 - 8 Typical	
Melting point/freezing point	Not available.	
Initial boiling point and boiling range	12 - 0 - 0 - 26S: 208 - 221°F (98 - 105°C), Typical	
Flash point	Not available.	
Evaporation rate	Not available.	
Flammability (solid, gas)	Not applicable.	
Upper/lower flammability or explosive limits		
Explosive limit - lower (%)	Not available.	
Explosive limit – upper (%)	Not available.	
Vapour pressure	Not available.	
Vapour density	Not available.	
Relative density	Not available.	
Solubility(ies)		
Solubility (water)	Soluble.	
Partition coefficient (n-octanol/water)	Not available.	
Auto-ignition temperature	Not available.	
Decomposition temperature	Not available.	
Viscosity	Not available.	
Other information	Salt Out Point: 12 - 0 - 0 - 26S: 43°F(7°C), Typical Salt Out Point: 11 - 0 - 0 - 24S: 27°F(-3°C), Typical	
Explosive properties	Not explosive.	

Oxidising properties Not oxidising.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Contact with incompatible materials. Heat. Extreme temperatures.

Incompatible materials Strong oxidising agents. Acids. Alkalis. Zinc. Water reactive materials.

Hazardous decomposition products Ammonia. Sulphur oxides. Ammonium sulfate. Nitrogen oxides. Hydrogen sulfide.

11. Toxicological information

Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful.

Skin contact Prolonged skin contact may cause temporary irritation.

Eye contact Causes serious eye irritation.

Ingestion May cause discomfort if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
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Ammonium hydroxide (CAS 1336-21-6)

Acute

Oral

LD50	Rat	350 mg/kg
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Ammonium sulfite (CAS 10196-04-0)

Acute

Inhalation

Dust

LC50	Guinea pig	> 400 mg/m ³ , 1 hours
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Ammonium thiosulphate (CAS 7783-18-8)

Acute

Dermal

LD50	Rabbit	> 2000 mg/kg, 24 Hours
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Inhalation

Dust

LC66	Rat	> 2260 mg/m ³ , 4 Hours
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Oral

LD50	Rat	2890 mg/kg
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Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitisation

Respiratory sensitisation Not a respiratory sensitiser.

Skin sensitisation This product is not expected to cause skin sensitisation.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ammonium bisulfite (CAS 10192-30-0)	3 Not classifiable as to carcinogenicity to humans.
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Ammonium sulfite (CAS 10196-04-0)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

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 thiosulphate (CAS 7783-18-8)			
Aquatic			
<i>Acute</i>			
Crustacea	LC50	Daphnia magna	101 mg/l, 48 Hours
Fish	LC50	Pimephales promelas	96.2 mg/l, 96 Hours
<i>Chronic</i>			
Algae	EC50	Chlorella vulgaris	2700 mg/l, 18 days

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

Ammonium hydroxide (CAS 1336-21-6) -2.66

Mobility in soil This product is water soluble and may disperse in soil.

Other adverse effects No data available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations 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 Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

TDG

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

Canadian regulations This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

Precursor Control Regulations

Not regulated.

International regulations**Stockholm Convention**

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto Protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply 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

Issue date	02-February-2024
Revision date	-
Version No.	01

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