

**Safety Data Sheet****Material Name: AMMONIUM THIOSULFATE SOLUTION****SDS ID: 00232061****\*\*\* Section 1 - PRODUCT AND COMPANY IDENTIFICATION \*\*\*****Material Name: AMMONIUM THIOSULFATE SOLUTION****Manufacturer Information**

Koch Fertilizer Canada Ltd.

Phone: (316) 828-7672

1400 17th Street East

Brandon, MB R7A 7C4

Emergency Response Assistance Plan: 1-204-729-2999,

Spill/Emergency Contact: CHEMTREC: 1-800-424-9300 (U.S.)

To Request an MSDS: (316) 828-7672

Email: kochmsds@kochind.com

**Trade Names**

AMMONIUM THIOSULFATE SOLUTION

**Synonyms**

ATS; AMMONIUM THIOSULFATE SOLUTION 15-0-0-20

**Product Use**

agricultural

**MSDS Number**

232061

**\*\*\* Section 2 - HAZARDS IDENTIFICATION \*\*\*****SIGNAL WORD**

DANGER!

**EMERGENCY OVERVIEW****Color:** white**Physical Form:** solution**Odor:** faint odor, ammonia odor

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**Major Health Hazards:** No significant target effects reported.

## POTENTIAL HEALTH EFFECTS

### Inhalation

**Short Term:** irritation, cough, sore throat, itching, difficulty breathing, wheezing, asthma, bluish skin color, lung congestion, blood disorders

**Long Term:** irritation, allergic reactions, lung damage

### Skin

**Short Term:** irritation

**Long Term:** irritation

### Eye

**Short Term:** irritation

**Long Term:** irritation

### Ingestion

**Short Term:** allergic reactions, sore throat, itching, nausea, vomiting, gastrointestinal irritation, stomach pain, difficulty breathing, wheezing, asthma, bluish skin color, blood disorders

**Long Term:** blood disorders, kidney damage

<b>*** Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS ***</b>
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CAS	Component	Percent
7783-18-8	AMMONIUM THIOSULFATE	41.27 - 49.7
7732-18-5	WATER	32.3 - 44.73
6484-52-2	AMMONIUM NITRATE	8 - 10
57-13-6	UREA	6 - 8
10196-04-0	AMMONIUM SULFITE	<5

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## \*\*\* Section 4 - FIRST AID MEASURES \*\*\*

### Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

### Skin

Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get immediate medical attention. Place contaminated clothing in a closed container until laundered or discarded. Contaminated clothing should be removed and laundered before reuse. Notify person laundering clothing of contaminant's hazardous properties. Discard contaminated leather goods.

### Eyes

Immediately flush eyes with plenty of water for at least 30 minutes. Hold eyelids away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

### Ingestion

If swallowed, drink plenty of water, do NOT induce vomiting. Do not give anything by mouth to unconscious or convulsive person. Keep warm and at rest. Get immediate medical attention.

### Note to Physicians

Signs and symptoms of CNS depression, confusion and convulsions should be considered in the assessment and treatment of victims of exposure.

## \*\*\* Section 5 - FIRE FIGHTING MEASURES \*\*\*

See Section 9 for Flammability Properties

**NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

### Flammable Properties

Negligible fire hazard. This material is a moderate reducing hazard. Mixtures with urea ammonium nitrate or ammonium nitrate solutions should not be allowed to dry. Dry mixtures of these substances, or other oxidizers, constitute a potential fire and explosion hazard.

### Extinguishing Media

carbon dioxide, regular dry chemical, regular foam, water

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## Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Do not get water directly on material. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

## Thermal Decomposition Products

**Combustion:** ammonia, ammonium compounds, hydrogen sulfide, oxides of sulfur, sulfur

## Thermal Decomposition Products

**Combustion:** Heating to dryness may cause the release of ammonia, ammonium sulfate, hydrogen sulfide, sulfur and oxides of sulfur. Ammonia and hydrogen sulfide may form flammable mixtures with air.

**Acids:** sulfur compounds

## Sensitivity to Mechanical Impact

No

## Sensitivity to Static Discharge

No

## \* \* \* Section 6 - ACCIDENTAL RELEASE MEASURES \* \* \*

### Water Release

Keep out of water supplies and sewers.

### Occupational spill/release

Do not touch spilled material. Stop leak if possible without personal risk. Small spills: Absorb with sand or other non-combustible material. Small dry spills: Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

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## \*\*\* Section 7 - HANDLING AND STORAGE \*\*\*

### Storage Procedures

Store and handle in accordance with all current regulations and standards. Store in a cool, dry place. Store in a tightly closed container. Store in a well-ventilated area. Avoid heat, flames, sparks and other sources of ignition. Empty containers may contain product residue. Do not reuse containers without adequate precautions. Keep separated from incompatible substances. Store below 88 C. Store in lined, coated, or stainless steel equipment. Do not install immersion heaters in storage tanks. DO NOT ALLOW TO DRY!

## \*\*\* Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION \*\*\*

### Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

### Ventilation

General or local exhaust ventilation and other forms of engineering controls are the preferred means for controlling exposures. If ventilation cannot reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used.

## PERSONAL PROTECTIVE EQUIPMENT

### Eyes/Face

Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

### Protective Clothing

Wear appropriate chemical resistant clothing.

### Glove Recommendations

Wear appropriate chemical resistant gloves.

### Respiratory Protection

A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Appropriate respirator selection should be made by a qualified professional as part of a comprehensive respiratory protection program as described in 29 CFR 1910.134.

Protection provided by air-purifying respirators is limited and should not be used in atmospheres deficient in oxygen or where airborne concentrations are immediately dangerous to life or health.

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Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

## \*\*\* Section 9 - PHYSICAL AND CHEMICAL PROPERTIES \*\*\*

<b>Physical State:</b>	Liquid	<b>Appearance:</b>	clear
<b>Color:</b>	white	<b>Physical Form:</b>	solution
<b>Odor:</b>	faint odor, ammonia odor	<b>Odor Threshold:</b>	Not available
<b>pH:</b>	7.5	<b>Melting Point/Freezing Point:</b>	-35 °C
<b>Boiling Point:</b>	Not available	<b>Decomposition:</b>	88 °C
<b>Flash Point:</b>	not flammable	<b>Evaporation Rate:</b>	Not available
<b>Vapor Pressure:</b>	Not available	<b>Vapor Density (air = 1):</b>	Not available
<b>Bulk Density:</b>	10.92 lbs/gal	<b>Density:</b>	Not available
<b>Specific Gravity (water = 1):</b>	1.310 @ 16 °C	<b>Water Solubility:</b>	miscible
<b>Coeff. Water/Oil Dist:</b>	Not available	<b>Viscosity:</b>	Not available
<b>Volatility:</b>	Not available		

## \*\*\* Section 10 - STABILITY AND REACTIVITY \*\*\*

### Chemical Stability

Stable at normal temperatures and pressure. Unstable at elevated temperatures. Avoid strong heating, open flame and ignition sources.

### Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. May ignite or explode on contact with combustible materials. Unstable above 150 C.

### Materials to Avoid

acid solutions above pH 5.8, ammonia compounds, ammonium polysulfide solutions, bases, dry ammonium nitrate, dry urea ammonium nitrate, oxidizing materials, zinc sulfate

### Decomposition Products

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**Combustion:** Heating to dryness may cause the release of ammonia, ammonium sulfate, hydrogen sulfide, sulfur and oxides of sulfur. Ammonia and hydrogen sulfide may form flammable mixtures with air.

**Acids:** sulfur compounds

## Decomposition Products

**Combustion:** ammonia, ammonium compounds, hydrogen sulfide, oxides of sulfur, sulfur

## Possibility of Hazardous Reactions

Will not polymerize.

<b>*** Section 11 - TOXICOLOGICAL INFORMATION ***</b>
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## Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

### **AMMONIUM THIOSULFATE (7783-18-8)**

Oral LD50 Rat: 1950 mg/kg

### **WATER (7732-18-5)**

Oral LD50 Rat: >90 mL/kg

### **AMMONIUM NITRATE (6484-52-2)**

Inhalation LC50 Rat: >88.8 mg/L/4H; Oral LD50 Rat: 2217 mg/kg

### **UREA (57-13-6)**

Oral LD50 Rat: 8471 mg/kg

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## RTECS Acute Toxicity (selected)

The components of this material have been reviewed, and RTECS publishes the following endpoints:

### AMMONIUM THIOSULFATE (7783-18-8)

Oral: 2890 mg/kg oral rat LD50

### WATER (7732-18-5)

Oral: >90 ml/kg oral rat LD50

### AMMONIUM NITRATE (6484-52-2)

Oral: 2217 mg/kg oral rat LD50

### UREA (57-13-6)

Oral: 8471 mg/kg oral rat LD50

## Acute Toxicity Level

### AMMONIUM THIOSULFATE (7783-18-8)

Moderately Toxic: ingestion.

### AMMONIUM NITRATE (6484-52-2)

Moderately Toxic: ingestion.

### UREA (57-13-6)

Slightly Toxic: ingestion.

## Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NTP, or DFG.

## RTECS Irritation

The components of this material have been reviewed, and RTECS publishes the following endpoints:

### UREA (57-13-6)

22 mg/3 day(s) intermittent skin human mild; 20 percent/24 hour(s) skin human moderate



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## Local Effects

### AMMONIUM NITRATE (6484-52-2)

Irritant: inhalation, skin, eye.

### UREA (57-13-6)

Irritant: eye.

## Medical Conditions Aggravated by Exposure

eye disorders, respiratory disorders, kidney disorders, skin disorders and allergies

## RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

## RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

## RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes data for one or more components.

## \* \* \* Section 12 - ECOLOGICAL INFORMATION \* \* \*

### Component Analysis - Aquatic Toxicity

#### AMMONIUM NITRATE (6484-52-2)

**Fish:** 48 Hr LC50 Cyprinus carpio: 65-85 mg/L [semi-static]

48 Hr LC50 Cyprinus carpio : 74000 ug/L (Mortality)

#### UREA (57-13-6)

**Fish:** 96 Hr LC50 Poecilia reticulata: 16200-18300 mg/L

96 Hr LC50 Tilapia mossambica : 22500 ug/L (Mortality)

**Invertebrate:** 24 Hr EC50 Daphnia magna Straus: >10000 mg/L; 48 Hr EC50 Daphnia magna: 3910 mg/L [Static]

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## \*\*\* Section 13 - DISPOSAL CONSIDERATIONS \*\*\*

### Disposal Methods

Dispose in accordance with all applicable regulations. This product, as supplied, when discarded or disposed of, is not a hazardous waste according to 40 CFR 261.

### Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

## \*\*\* Section 14 - TRANSPORT INFORMATION \*\*\*

### US DOT Information

No Classification assigned.

### TDG Information

No Classification assigned.

## \*\*\* Section 15 - REGULATORY INFORMATION \*\*\*

### U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

#### AMMONIUM SULFITE (10196-04-0)

CERCLA: 5000 lb final RQ; 2270 kg final RQ

### SARA 311/312

Acute Health: No Chronic Health: No Fire: No Pressure: No Reactive: No

### Clean Air Act

This product does not contain any component listed as a hazardous air pollutant under Title III of the Clean Air Act Amendment of 1990.

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## U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
AMMONIUM THIOSULFATE	7783-18-8	No	Yes	No	No	Yes	No
AMMONIUM NITRATE	6484-52-2	No	Yes	No	Yes	Yes	Yes
UREA	57-13-6	No	No	Yes	No	No	No
AMMONIUM SULFITE	10196-04-0	Yes	Yes	No	Yes	Yes	No

Not regulated under California Proposition 65

## New Jersey

This MSDS was prepared in accordance with the New Jersey Worker and Community Right-to-Know Act.

## Pennsylvania

This MSDS was prepared in accordance with the Pennsylvania Worker and Community Right-to-Know Act.

## Controlled Products Regulations (CPR)

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## WHMIS Classification

Not a Controlled Product under Canada's Workplace Hazardous Material Information System.

## Component Analysis - Inventory

Component	CAS	US	CA	EINECS	ELINCS
AMMONIUM THIOSULFATE	7783-18-8	Yes	DSL	Yes	No
WATER	7732-18-5	Yes	DSL	Yes	No
AMMONIUM NITRATE	6484-52-2	Yes	DSL	Yes	No
UREA	57-13-6	Yes	DSL	Yes	No
AMMONIUM SULFITE	10196-04-0	Yes	DSL	Yes	No

## U.S. Inventory (TSCA)

All the components of this substance are listed on or are exempt from the inventory.

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## Canada Inventory (DSL/NDSL)

All components of this product are listed on the DSL.

### \* \* \* Section 16 - OTHER INFORMATION \* \* \*

#### Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

#### Other Information

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS 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. In addition, 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.

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