SAFETY DATA SHEET

Ammonium Thiosulfate Solution

1. IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY

Product Name:	Ammonium Thiosulfate Solution
Product Code:	ATS
Synonyms:	Ammonium hyposulfite solution, Thiosulfuric acid, diammonium salt sol.
Product Use:	Agricultural and industrial. For industrial and agricultural use only.
Manufacturer:	PCI Nitrogen, LLC 713-920-5300 2001 Jackson Rd www.pcicorp.net Pasadena, TX 77506
Emergency Phone #s:	CHEMTREC 1-800-424-9300 (within US)

2. HAZARDS IDENTIFICATION

Hazards:	Not classified

Label Elements

Hazard Symbol:	Not applicable
Signal Word:	Not applicable
Hazard Statement:	Not applicable
Precautionary Statements	Not applicable
Hazard(s) Not Otherwise Classified:	Not applicable
Supplemental Information:	Not applicable

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredients	% (w/w)	CAS Number	Hazards
Ammonium Thiosulfate	50 – 60	7783-18-8	Acute Toxicity, 4 (oral), H302
Water	29 – 49.5	7732-18-5	Not classified
Ammonium Sulfate	0 – 6	7783-20-2	Acute Toxicity, 4 (oral), H302
Ammonium Sulfite	0.5 – 5	10196-04-0	Not classified

4. FIRST AID MEASURES

General:	Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).
Inhalation:	If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
Eye Contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.
Skin Contact:	Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash contaminated clothing before reuse. Obtain medical attention if irritation develops or persists.
Ingestion:	Do not induce vomiting. Rinse mouth. Call a POISON CENTER/ doctor/ physician if you feel unwell.

Most Important Symptoms and Effects, both acute and delayed

General:	None expected under normal conditions of use.
Inhalation:	Not expected to present a significant inhalation hazard under anticipated conditions of normal use.
Eye Contact:	May cause minor eye irritation.
Skin Contact:	May cause mild skin irritation.
Ingestion:	May be harmful if swallowed.
Chronic Symptoms:	Not available

5. FIRE FIGHTING MEASURES

Conditions of Flammability:	Non Flammable
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.
Fire Fighting Procedures:	Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers. Do not enter the fire area without proper protective equipment, including respiratory protection. Do not allow run-off from fire fighting to enter drains or water courses.
Fire & Explosion Hazards:	Not Explosive Hazardous reactions will not occur under normal conditions May release hazardous combustion products (sulfur oxides, nitrogen oxides)

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment And Emergency Procedures

General:	Avoid all eye and skin contact and do not breathe vapor and mist.
For Non- Emergency Personnel:	Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection. Stop leak if safe to do so. Eliminate ignition sources. Evacuate unnecessary personnel.
For Emergency Responders:	Use recommended respiratory protection. Wear suitable protective clothing, gloves and eye/face protection. Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.
Environmental Precautions:	Do not allow to enter drains or water courses. Avoid release to the environment.

Methods And Materials For Containment And Clean Up

For Containment:	Absorb and/or contain spill with inert material, then place in suitable container.
Methods for Cleaning Up:	Clean up spills immediately and dispose of waste safely.

7. HANDLING AND STORAGE

Handling:	Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Handle in accordance with good industrial hygiene and safety procedures.
Storage:	Store in a dry, cool and well-ventilated place. Store away from other materials. Incompatible with: strong acids, strong bases, strong oxidizers.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Occupational Exposure Limits:	No exposure limits noted for ingredient(s).
Exposure Guidelines:	No exposure limits noted for ingredient(s).
Engineering Controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas.

Personal Protection Equipment

Hand Protection:	Wear chemically resistant protective gloves.
Eye / Face Protection:	Chemical goggles or safety glasses.
Skin Protection:	Wear suitable protective clothing.
Respiratory Protection:	Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of dust are expected to exceed exposure limits.
General Hygiene Considerations:	When using, do not eat, drink or smoke.

9. TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Colorless to pale yellow liquid
Odor:	Slight ammonia and/or organic
Odor Threshold:	Not available
pH:	6.5 – 8.5
Evaporation Rate (Butyl Acetate=1):	Not available
Melting/Freezing Point:	-1.1 - 15.56 °C (30 - 60 °F)
Boiling Point:	98.89 - 104.44 °C (210 - 219 °F)
Flash Point:	Not available
Auto-ignition Temperature:	Not available
Decomposition Temperature:	Not available
Flammability (solid, gas):	Not available
Lower Flammable Limit:	Not available
Upper Flammable Limit:	Not available
Vapor Pressure:	18 mmHg at 70˚F (21.1˚C)
Relative Vapor Density at 20°C:	Not available

Relative Density:	1.32 - 1.35 (water = 1)
Solubility:	Completely soluble in water
Log Pow:	See Section 12
Log know:	Not available
Viscosity, Kinematic:	Not available
Viscosity, Dynamic:	13.46 - 13.77 cP at 100 °C (212 °F)
Explosion Data – Sensitivity to Mechanical Impact:	Not available
Explosion Data – Sensitivity to Static Discharge:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	Hazardous reactions will not occur under normal conditions.
Stability:	Stable at standard temperature and pressure.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	Extremely high or low temperatures.
Incompatible Materials:	Strong acids. Strong bases. Strong oxidizers.
Decomposition Products:	Ammonia. Nitrogen oxides. Sulfur compounds.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	Not classified
LD50 and LC50 Data:	See below and Section 12
Skin Corrosion/ Irritation:	Not classified (pH: 6.5 - 8.5)
Serious Eye Damage/ Irritation:	Not classified (pH: 6.5 - 8.5)
Respiratory or Skin Sensitization:	Not classified
Germ Cell Mutagenicity:	Not classified
Teratogenicity:	Not available

Carcinogenicity:	Not classified
Specific Target Organ Toxicity (Repeated Exposure):	Not classified
Specific Target Organ Toxicity (Single Exposure):	Not classified
Reproductive Toxicity:	Not classified
Aspiration Hazard:	Not classified
Potential Adverse Human Health Effects and Symptoms:	Harmful if swallowed
Symptoms/ Injuries After Inhalation:	Not expected to present a significant inhalation hazard under anticipated conditions of normal use
Symptoms/ Injuries After Skin Contact:	May cause mild skin irritation
Symptoms/ Injuries After Eye Contact:	May cause minor eye irritation
Symptoms/ Injuries After Ingestion:	May be harmful if swallowed

Information on Toxicological Effects – Ingredients(s) – LD50 and LC50 Data

Ammonium Sulfate (7783-20-2)

LD50 Oral Rat	2000 mg/kg
ATE (oral)	2000 mg/kg body weight

Ammonium Thiosulfate (7783-18-8)

LD50 Oral Mouse	2,100 - >3,000 mg/kg
LC50 Inhalation Rat	2,260 mg/m^3 (4 hr)
LC50 Inhalation Mouse	>1,800 mg/m^3 (4 hr)
LD50 Oral Rat	1950 mg/kg
ATE (oral)	1950 mg/kg

12. ECOLOGICAL INFORMATION

Toxicity

Ammonium Sulfate (7783-20-2)

LC50 Fish 1	5.2 - 8.2 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	423 mg/l (Exposure time: 24 h - Species: Daphnia magna)
LC50 Fish 2	32.2 - 41.9 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
EC50 Daphnia 2	14 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Ammonium Thiosulfate (7783-18-8)

Static acute 96 hour-LC50 for bluegills is 1,000 mg/L
Static acute 96 hour-LC50 for rainbow trout is 770 mg/L
Static acute 96 hour-LC50 for sheepshead minnow is >1,000 mg/L
Static acute 96 hour-LC50 for mysid shrimp is 77 mg/L

Persistence and Degradability

Ammonium Thiosulfate Solution

Persistence and Degradability	Not established

Bioaccumulative Potential

Ammonium Thiosulfate Solution

Bioaccumulative Potential	Not established

Ammonium Sulfate (7783-20-2)

Log Pow	-5.1 (at 25 °C)
Mobility in Soil:	Not available
Other Adverse Effects:	Avoid release to the environment

13. DISPOSAL CONSIDERATIONS

Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

14. TRANSPORT INFORMATION

DOT UN No.:	Not regulated
DOT Proper Shipping Name:	Not regulated
DOT Hazard Classes:	Not regulated
DOT Symbols:	Not regulated
DOT Packing Group:	Not regulated
DOT Reportable Quantity (RQ):	5,000 lb of Ammonium Sulfite; see Section 3 for weight percent.
USCG CHRIS Codes:	ATV – Ammonium Thiosulfate AME – Ammonium Sulfate solution AMF – Ammonium Sulfite solution

15. REGULATORY INFORMATION

US Federal Regulations

Ammonium Sulfate (7783-20-2)

United States TSCA (Toxic Substances Control Act) inventory		Yes
EPCRA (SARA) § 313 Toxic Release Inventory (TRI)		Yes[1]
EPCRA (SARA) § 302 Extremely Hazardous Substance (EHS)		No
EPCRA (SARA) § 302 Threshold Planning Quantity (TPQ)		No
EPCRA (SARA) § 302 EHS Reportable Quantity (RQ)		No
CERCLA Reportable Quantity (RQ)		No
CERCLA Hazardous Substance		No

Ammonium Sulfite (10196-04-0)

United States TSCA (Toxic Substances Control Act) inventory		Yes
EPCRA (SARA) § 313 Toxic Release Inventory (TRI)		Yes[1]
EPCRA (SARA) § 302 Extremely Hazardous Substance (EHS)		No
EPCRA (SARA) § 302 Threshold Planning Quantity (TPQ)		No
EPCRA (SARA) § 302 EHS Reportable Quantity (RQ)		No
CERCLA Reportable Quantity (RQ)	*(See Section 3 for weight percent)*	5,000 lb.
CERCLA Hazardous Substance		Yes

Ammonium Thiosulfate (7783-18-8)

United States TSCA (Toxic Substances Control Act) inventory	Yes
EPCRA (SARA) § 313 Toxic Release Inventory (TRI)	Yes[1]
EPCRA (SARA) § 302 Extremely Hazardous Substance (EHS)	No
EPCRA (SARA) § 302 Threshold Planning Quantity (TPQ)	No
EPCRA (SARA) § 302 EHS Reportable Quantity (RQ)	No
CERCLA Reportable Quantity (RQ)	No
CERCLA Hazardous Substance	No

[1]Water dissociable ammonium compound

US State Regulations

Ammonium Sulfate (7783-20-2)

U.S. - California - SCAQMD - Toxic Air Contaminants With Proposed Risk Values
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

Ammonium Sulfite (10196-04-0)

U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Louisiana - Reportable Quantity List for Pollutants
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Michigan - Polluting Materials List
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

Ammonium Thiosulfate (7783-18-8)

U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

Canadian Regulations

Ammonium Thiosulfate Solution

WHMIS Classification:	Uncontrolled product according to WHMIS classification criteria

Ammonium Sulfate (7783-20-2)

Listed on the Canadian DSL (Domestic Substances List) Inventory
Listed on the Canadian Ingredient Disclosure List

WHMIS Classification:	Uncontrolled product according to WHMIS classification criteria

Ammonium sulfite (10196-04-0)

Listed on the Canadian DSL (Domestic Substances List) Inventory

Ammonium Thiosulfate (7783-18-8)

Listed on the Canadian DSL (Domestic Substances List) Inventory

WHMIS Classification:	Uncontrolled product according to WHMIS classification criteria

Water (7732-18-5)

Listed on the Canadian DSL (Domestic Substances List) Inventory

WHMIS Classification:	Uncontrolled product according to WHMIS classification criteria

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

16. OTHER INFORMATION

Prepared by:	Technical Staff at PCI Nitrogen, LLC. Telephone: 713-920-5300

The information contained in this Safety Data Sheet (SDS) relates only to the specific product(s) designated herein. The information and recommendations are based upon data believed to be current as of the date of this SDS and was obtained from sources believed to be accurate. However, this information is furnished without warranty, representations, or license of any kind, express or implied, with respect to accuracy, correctness, or completeness and neither PCI Nitrogen, LLC nor its marketing affiliates assume any legal responsibility for use or reliance upon same.