



Safety Data Sheet

1. Product Identifier and Company Identification

Product name	: Liquid Ammonium Sulfate 10-40%	
HBCC SDS number	:	
Synonym	: Ammonium Sulfate Solution	
Product use and Restrictions	: Refer to label or call	
Manufacturer	: Corporate Headquarters	Corporate Safety & Compliance
Contact Address	Hill Brothers Chemical Company 3000 E Birch St #108 Brea, CA 92821 714-998-8800 800-821-7234 – Office	Hill Brothers Chemical Company 7121 West Bell Road, Suite 250 Glendale, Arizona 85308 623-535-9955 - Office 623-535-9944 - Fax
Emergency telephone Number (Chemtrec)	: 800-424-9300	
Website	: https://hillbrothers.com	

2. Hazard Identification

Classification	: None
Signal Word	: None
Pictogram(s)	: None
Hazard Statements	: None

Precautionary Statements

Response	: None
Prevention	: None
Storage	: None
Disposal	: None

3. Composition/Information on Ingredients

CAS Number	Ingredient Name	Weight %
7783-20	Ammonium Sulfate	10-40%
7732-18-5	Water	Balance

4. First Aid Measures

Ingestion	: Rinse mouth. Get medical attention if symptoms occur.
Inhalation	: Move to fresh air. Get medical attention if symptoms develop or persist.
Skin	: May cause mild skin irritation. Remove affected clothing and wash all exposed skin area with mild soap and water. Get medical attention if symptoms develop or persist.

- Eyes** : May cause mild eye irritation. Rinse immediately with plenty of water. Get medical attention if symptoms develop or persist.
- Effects of Overexposure** : N/A
- Summary of Acute Health Hazards** : Not expected to present a significant hazard under anticipated conditions for normal use.
- Ingestion** : N/A
- Inhalation** : N/A
- Skin** : N/A
- Eyes** : Direct contact with eyes may cause temporary irritation.
- Note to Physicians** : N/A
- Summary of Chronic Health** : Not expected to present a significant hazard under anticipated conditions for normal use.

5. Fire Fighting Measures

- Extinguishing** : Foam. Dry powder. Carbon dioxide. Water spray. Sand. Do not use heavy water stream.
- Special Exposure Hazards** : N/A
- Special Protective Equipment for Firefighters** : Do not enter fire area without proper protective equipment, including respiratory protection.
- Fire Fighting Procedures** : Use water spray or fog for cooling exposed containers. Use standard fire fighting procedures and consider the hazards of other involved materials.
- NFPA Rating** : Health - 1
Flammability - 0
Instability - 0



0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

- Uniform Fire Code Rating** : N/A

6. Accidental Release Measures

Personal Precautions & Emergency Procedures

- : Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods of Containment And Clean-Up

- : Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer, and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, to determine the appropriate local, state, and federal requirements for disposal.

Environmental Precautions

- : Void release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

7. Handling and Storage

Safe Handling

- : Wear appropriate PPE. Observe good industrial hygiene practices.

Storage

- : Store in original, tightly closed container. Keep container closed when not in use.

Work/Hygienic Practices

- : Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and when leaving work.

Ventilation

- : Provide good ventilation in process area to prevent formation of vapor.

Incompatible Products

- : Strong bases. Strong acids.

Incompatible Materials

- : Sources of ignition. Direct sunlight.

8. Exposure Controls/Personal Protective Equipment

Occupational Exposure Limits

Chemical Name: Liquid Ammonium Sulfate				
Exposure Limits (TWAs) in Air				
CAS Number	IDLH	ACGIH TLV	OSHA PEL	STEL
7783-20-2	-	-	-	-

Protective Equipment

- : Avoid all unnecessary exposure. Wear protective gloves.

Eye Protection

- : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

- Skin Protection** : Handle with gloves.
- Respiratory Protection** : Respiratory protection is not required. If desired, use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties

Appearance: A clear, colorless liquid	Odor: Odorless
Odor Threshold: N/A	pH: 2.7-5
Melting Point/Freezing Point: N/A	Initial Boiling Point/Range: 221°F
Flash Point: N/A	Evaporation Rate (BuAc=1): N/A
Flammability: N/A	Lower/Upper Explosive Limit: N/A
Vapor Pressure (mmHg): N/A	Vapor Density (Air=1): N/A
Density: 8.83- 10.25 Lbs/US. Gal	Solubility in Water: Complete
Partition Coefficient: N/A	Autoignition Temperature: N/A
Decomposition Temperature: N/A	Viscosity: N/A
% Volatiles: 60-90% estimated	Specific Gravity (Water=1): 1.06-1.23
Molecular Weight: N/A	VOC: N/A

10. Stability and Reactivity

- Reactivity** : Stable and non-reactive under normal conditions of use, storage and transport.
- Chemical Stability** : Material is stable under normal conditions.
- Possibility of Hazardous Reactions or Polymerizations** : No dangerous reaction known under conditions of normal use.
- Conditions to Avoid** : Heat. Open flame. Direct sunlight. Extremely high or low temperatures.
- Incompatible Materials** : Oxidizing agents. Metals. Strong acids. Strong bases.
- Hazardous Decomposition Products** : Fume. Carbon Monoxide. Carbon Dioxide.

11. Toxicological Information

- Acute Toxicity** : Not classified
- Routes of Exposure**
- Ingestion** : Expected to be a low ingestion hazard
 - Inhalation** : No adverse effects due to inhalation are expected.
 - Skin** : No adverse effects due to skin contact are expected.
 - Eyes** : Direct contact with eyes may cause temporary irritation.

Symptoms related to Physical, Chemical & Toxicological

: May cause abdominal pain, nausea, and or vomiting. Product mists may cause irritation to the respiratory tract. Prolonged exposure may cause irritation or burns if the product is wet or in the presence of perspiration. Prolonged exposure may cause irritation and inflammation of the eye.

Characteristics Numerical Measures of Toxicity

: Ammonium Sulfate
(dermal, rat): >2000 mg/kg
LD50 (oral, rat): 640-4250 mg/kg
ATE US (oral): 640.00000000 mg/kg body weight

Ammonium Sulfate (7783-20-2)
LD50 (dermal, rat): >2000 mg/kg
LD50 (oral, rat): 2840 mg/kg (Rat)
ATE US (oral): 2840.00000000 mg/kg body weight

Chronic Toxicity

: Not classified

Carcinogenicity

: Not classified

Product Name: Liquid Ammonium Sulfate					
ACGIH	IARC	EPA	NIOSH	NTP	OSHA
-	-	-	-	-	-

Target Organs

: May cause respiratory irritation (single exposure).

12. Ecological Information

Ecotoxicity

: Ammonium Sulfate (7783-20-2):
LC50 fish 1: 126mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 1: 202 mg/l (96 h; Daphnia magna)
LC50 fish 2: 250-480 mg/l (96 h; Brachydanio rerio)
EC50 Daphnia 2: 433 mg/l (50 h; Daphnia magna)
TLM fish 1: 1290 ppm (96 h; Gambusia affinis)

Persistence and Degradability

: Ammonium Sulfate Solution 40%: Not established.

Ammonium Sulfate (7783-20-2): Biodegradability in water: no data available. Not established.

Water (7732-18-5): Not established.

Bioaccumulative Potential

: Ammonium Sulfate Solution 40%: Not established.

Ammonium Sulfate (7783-20-2):
Log Pow: -5.1
Bioaccumulation: Not applicable. Not established.

Water (7732-18-5): Not established.

Mobility in Soil

: No additional information available.

13. Disposal Considerations

Disposal Methods

: Recycle any unused portion of the material for its approved use. Ultimate disposal of the chemical must consider: the material’s impact on air quality; potential migration in air, soil, or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations. Product: Offer surplus and non-recyclable solutions to a licensed disposal company.

14. Transport Information

This product is not regulated as a hazardous material, substance or dangerous good.

15. Regulatory Information

SARA 302 Extremely Hazardous Substances (EHS)

: No chemical in this product is listed as an Extremely Hazardous Substance (EHS) under Section 302 of EPCRA.

SARA 304 Extremely Hazardous Substances (EHS) Release Notification

: No chemical in this product is listed as an Extremely Hazardous Substance (EHS) which, if released into the environment in quantities at or above the substance’s Reportable Quantity (RQ), would require reporting to the SERC and LEPC under Section 304 of EPCRA.

SARA 311/312 Hazards

:

SARA 311/312 Hazards				
Acute	Chronic	Flammability	Pressure	Reactivity
No	No	No	No	No

SARA 313 Reportable Chemicals

: No chemical in this product is subject to annual emissions, transfers, or waste management reporting under the Community-Right-to-Know provisions of EPCRA Section 313, also known as the Toxics Release Inventory (TRI) Report or Form R.

CERCLA Hazardous Substances

: No chemical in this product is listed as a CERCLA hazardous substance subject to the National Response Center (NRC) release reporting requirements.

Clean Air Act (CAA) Section 112(r) Air Pollutants

: No chemical in this product is listed as an air pollutant under the U.S. Clean Air Act, Section 112(r) (40 CFR 61).

California Prop 65 Chemicals

: This product does not contain any chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.

Hazard Label Warning

: None

TSCA (Toxic Substances Control Act)

: All chemical substances in this product are listed on the U.S. TSCA Inventory List except for: Water (7732-18-5) 60%

ACRONYMS:

CAS # – Chemical Abstract Services Registry Number
CFR – Code of Federal Regulations
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
EPCRA – Emergency Planning and Community Right-to-Know Act
LEPC – Local Emergency Planning Committee
SERC – State Emergency Response Commission



Maximum use level under NSF/ANSI Standard 60

Liquid Ammonium Sulfate 40%

Maximum use

60 mg/L

Ammonium Sulfate 40% Solution

Maximum use

60 mg/L

16. Other Information

Revision Date : 05/05/2021

Supersedes : 11/02/2017

First Issue : 11/04/2016

Chemical Family/Type : Inorganic Salt

Section(s) changed since last revision : Sections 1,3,4,5,6,8,9,11,12,13,16

IMPORTANT! Read this SDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This SDS has been prepared in accordance with the Globally Harmonized System of Chemical and Labeling of Chemicals (GHS) Fifth Edition and the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The SDS information is based on sources believed to be reliable. Available data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control; **Hill Brothers Chemical Company** makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks and exercise appropriate precautions for protection of employees and others prior to use.

PRODUCT SPECIFICATIONS

Liquid Ammonium Sulfate 40% Solution



PRODUCT DESCRIPTION

Liquid Ammonium Sulfate (LAS) is a clear to pale yellow odorless liquid solution. LAS is a stable, non-hazardous, non-toxic aqueous ammonium sulfate solution manufactured at 40% by weight ammonium sulfate $(NH_4)_2SO_4$.

CHEMICAL PROPERTIES

Appearance	Clear to pale yellow solution
Assay $(NH_4)_2SO_4$	39% min
Heavy Metals as Lead (Pb)	10 ppm max

Hill Brothers' Liquid Ammonium Sulfate 40% Solution meets or exceeds all above specifications by independent laboratory test.

PHYSICAL PROPERTIES

Specific Gravity @ 60°F	1.230
Pounds per gallon @ 60°F	10.2
Boiling Point	221°F
Freezing Point	0°F
Solution pH	2.7

NSF Tested and Certified In Accordance with Standard 60



Maximum use level for Liquid Ammonium Sulfate
Under NSF/ANSI Standard 60
LAS 40% Maximum use 60 mg/L

SAFETY & HANDLING

Liquid ammonium sulfate is classified as a non-hazardous chemical; it does not require specialized equipment or special handling. Hill Brothers attests that the product meets all pertinent specifications but accepts no responsibility for its end use. Although this product meets specifications, this in no way mitigates the hazards inherent in this product. Proper safety equipment and other safety concerns must be observed. Refer to the Liquid Ammonium Sulfate Safety Data Sheet (SDS) for safety information.

Rev. 8/2021

The information on this Product Profile is based on data obtained by our own research and is considered accurate. However, no warranty is expressed or implied regarding the accuracy of this data, the results to be obtained from the use thereof, or that any such use will not infringe any patent. This information is furnished upon the condition the person receiving it shall make his own tests to determine the suitability thereof for his particular purpose. For latest product specifications, contact our nearest sales office.

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EVALUATION REPORT

Send To: 22370

Mr. Tony Garcia
 Hill Brothers Chemical Company
 15017 East Clark Avenue
 City of Industry, CA 91745

Facility: 22374

Hill Brothers Chemical Company
 15017 East Clark Avenue
 Industry CA 91745
 United States

Result	PASS	Report Date	16-OCT-2023
Customer Name	Hill Brothers Chemical Company		
Tested To	NSF/ANSI/CAN 60		
Description	Ammonium Sulfate 40% Liquid		
Trade Designation	Ammonium Sulfate 40%		
Test Type	Annual Collection		
Job Number	A-00445080		
Project Number	W0805801		
Project Manager	Jennifer Biers		

This report documents the testing of the referenced product to the requirements of NSF/ANSI/CAN Standard 60 (Drinking Water Treatment Chemicals - Health Effects). This standard establishes minimum requirements for chemicals, the chemical contaminants, and impurities that are added to drinking water from drinking water treatment chemicals. Contaminants produced as by-products through reaction of the treatment chemical with a constituent of the drinking water are not covered by this Standard. Reference the "About the Standard" section at the end of this report for additional information about NSF/ANSI/CAN Standard 60 and the products covered under this Standard.

Thank you for having your product tested by NSF.

Please contact your Project Manager if you have any questions or concerns pertaining to this report.

Report Authorization 
 Scott E. Randall - Senior Manager Commercial Water

Date 16-OCT-2023



General Information

Standard: NSF/ANSI/CAN 60
 Chemical Name: Ammonium Sulfate 40%
 Monitor Code: B
 Physical Description of Sample: Liquid
 Tested DCC Number: DA08950
 Trade Designation/Model Number: Ammonium Sulfate 40%

Sample Id: **S-0002044337**
 Description: Ammonium Sulfate 40% | Liquid
 Sampled Date: 03-Oct-2023
 Received Date: 24-Aug-2023

Tox Normalization Information:		Lab Normalization Information:	
Calculated NF	0.0893	Date exposure completed	03-OCT-2023
Preparation method used	A	Final volume of solution	0.25 L
MUL	60 mg/L	Mass of material used	168 mg
Compound Reference Key:	SPAC		

Normalization Calculation:

$$\text{Normalized Result} = \text{Test Result (ug/L)} * \text{NF} \quad \text{Where NF} = \text{MUL (mg/L)} * \frac{\text{Final Volume Of Solution (L)}}{\text{Mass of Material Used (mg)}}$$

- MUL = Maximum Use Level;
- Mass of Material Used = The mass of sample analyzed in the laboratory;
- Final Volume of Solution = The volume of water used to dilute the sample;
- An additional factor may be used to adjust the analytical result to field use conditions to account for product carryover, flushing, or other assumptions stipulated with the use of the product. If an additional factor is used, it is included in the information above.

Testing Parameter	Units	Sample	Control	Result	Norm. Result	Acceptance Criteria(1)	Evaluation Status
Ann Arbor Chemistry Lab							
Metals II in water by ICPMS (Ref: EPA 200.8)							
Arsenic	ug/L	ND(1)	ND(1)	ND(1)	ND(0.09)	1	Pass
Barium	ug/L	ND(1)	ND(1)	ND(1)	ND(0.09)	200	Pass
Beryllium	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.04)	0.4	Pass
Cadmium	ug/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.02)	0.5	Pass
Chromium	ug/L	ND(1)	ND(1)	ND(1)	ND(0.09)		
Copper	ug/L	ND(1)	ND(1)	ND(1)	ND(0.09)	130	Pass
Mercury	ug/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.02)	0.2	Pass
Lead	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.04)	0.5	Pass
Antimony	ug/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.04)	0.6	Pass
Selenium	ug/L	ND(1)	ND(1)	ND(1)	ND(0.09)	5	Pass
Thallium	ug/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.02)	0.2	Pass
1 - If the acceptance criteria is blank and the evaluation status is "Fail", then the criteria used will be noted on the letter accompanying these results.							



Common Terms and Acronyms Used:

- Sample..... Test result on the submitted product sample after prepared or exposed in accordance with the standard.
- Control..... Test result on a laboratory blank sample analyzed in parallel with the sample.
- Result..... Sample test result minus the Control test result.
- Normalized Result... Result normalized in accordance with the test standard to reflect potential at-the-tap concentrations
- ND()..... Result is below the detection level of the analytical procedure as identified in the parenthesis.
- DCC Number..... NSF document control code of the registered formulation of the product tested
- ug/L..... Microgram per liter = 0.001 milligram per liter (mg/L)
- SPAC..... Acceptance criteria of the standard (Single Product Allowable Concentration)

References to Testing Procedures:

NSF Reference	Parameter / Test Description
C1183	Metals II in water by ICPMS (Ref: EPA 200.8)

Test descriptions preceded by an asterisk "*" indicate that testing has been performed per NSF requirements but is not within its scope of accreditation.

Unless otherwise indicated, method uncertainties are not applied in any determinations of conformity. Testing utilizes the requested sections of any referenced standards, which may not be the entire standard.

Dates of Laboratory Activity: 29-SEP-2023 to 05-OCT-2023

Testing Laboratories:

All work performed at:	Id	Address
—————▶	NSF_AA	NSF 789 N. Dixboro Road Ann Arbor MI 48105



About the Standard:

NSF/ANSI/CAN Standard 60: Drinking Water Treatment Chemicals - Health Effects

NSF/ANSI/CAN 60 establishes minimum health effects requirements for the chemicals, the chemical contaminants, and the impurities that are directly added to drinking water from drinking water treatment chemicals. It does not establish performance or taste and odor requirements. The standard contains requirements for chemicals that are directly added to water and are intended to be present in the finished water as well as other chemical products that are added to water but are not intended to be present in the finished water. Chemicals covered by this Standard include, but are not limited to, coagulation and flocculation chemicals, softening, precipitation, sequestering, pH adjustment, and corrosion/scale control chemicals, disinfection and oxidation chemicals, miscellaneous treatment chemicals, and miscellaneous water supply chemicals.

The testing performed to this standard is done to estimate the level of contaminants or impurities added to drinking water when the chemical is used at the "Maximum Use Level" under attestation. Prior to testing, information is obtained on the formulation and sources of supply used to manufacture the chemical. This information is then reviewed along with the minimum requirements of the standard to establish the potential contaminants of concern. A representative sample of chemical is obtained for testing. The chemical sample is prepared for analysis through specific methods established in the standard based on the type of chemical and then is analyzed for potential contaminants determined during the formulation review. The laboratory results are normalized to represent potential at-the-tap values and then compared to the "single product allowable concentration" (SPAC) established by the standard. The product is found in compliance with the standard if the normalized value is less than or equal to the allowable concentration.