



H.R. LaBounty Safety Awards Nomination Form

Nomination Deadlines:

Spring Awards: February 1, 2020

Fall Awards: September 1, 2020

Agency: Walnut Valley Water District

Project/Initiative Title: Aqueous Ammonia to Liquid Ammonia Sulfate

Implementation Date: August 2018

Cost to Implement: \$0

Staff Time Required: 2 men, 8 hours each

Number of Employees/Facilities Impacted: 7 production staff, 5 production facilities

Employee/Department/Committee Nominated:

Name(s): Tom Monk/ Tom Hunt

Job Title/Department: Director of Operations/ Production Supervisor

Nomination Summary

Write a brief summary of your project/initiative. Clearly state the problem/hazard recognized by the nominee and the specific reasons that they initiated corrective action.

To lessen or eliminate the use of aqueous ammonia in the districts chloramination boosting stations.

Describe the specific actions taken to resolve the problem(s) or challenge(s). Share the best practices that made this initiative successful for the agency and its impact.

Change the use of aqueous ammonia to the use of liquid ammonia sulfate. The use of liquid ammonia sulfate(LAS), reduced the health liability to employees that were tasked with the delivery and maintenance of the ammonia section of the districts chloramine boosting systems.

State whether the hazard was reduced with engineering controls, introduced a new administrative or work procedure, or relied on personal protective equipment to solve the problem.

See attached SDS for aqueous ammonia and LAS. The reduction of the health component from a 3 for aqueous to a 1 for LAS eliminated the required use of a full face respirator for all handling of the ammonia product. The switch from aqueous to LAS achieved the same chloramination results, greatly lessened the negative health impact on the production employees, and the LAS has had no negative financial impact on the daily district chemical budget.

Describe any extraordinary circumstances that made this nominee's safety accomplishments significant. Describe whether the nominee influenced safety in the workplace, encouraged employee participation in safety efforts, obtained organizational "buy in" to implement the solution.

Through Tom Monk's direction, Tom Hunt and Tom Monk researched viable options for the use of aqueous ammonia. Once LAS was brought to our attention, we researched and found that LAS was a suitable replacement. LAS was compatible with all existing chloramination equipment, just a thorough cleaning of the existing aqueous system was required to implement the LAS.

Describe whether the project/initiative addressed a hazard or exposure included in the JPIA Commitment to Excellence Program.

- Office/Field Ergonomics
- Vehicle Operations
- Slip/trip/falls – falls from heights
- Other: Reducing employee exposure to harmful chemicals.

List and attach any supporting materials that you feel are important for the reviewers to gain a complete picture of the nomination. Digital photos, supporting documentation, sample forms, etc.

Aqueous Ammonia SDS, supplied by Hill Brothers Chemical

Liquid Ammonia Sulfate SDS, supplied by Hill Brothers Chemical.

Picture of NFPA placarding for Aqueous Ammonia. Picture of NFPA placarding for LAS

Nominated by: Thomas Hunt

Date: 08/28/2020

General Manager: Erik Hitchman

Date:

Please email this form with supporting documents and digital photos (jpg) to tlofinq@acwajpia.com.



Safety Data Sheet

1. Product Identifier and Company Identification

Product name	: Aqua Ammonia Solutions	
HBCC SDS number	: CA13226	
Synonym	: Ammonium Hydroxide; Aqueous Ammonia; Water Ammonia; Aqua Ammonia; Ammonia Solutions	
Product use and Restrictions	: Refer to label or call	
Manufacturer	: Corporate Headquarters	Corporate Safety & Compliance
Contact Address	Hill Brothers Chemical Company 1675 North Main Street Orange, California 92867 714-998-8800 – Office 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	: http://hillbrothers.com	

2. Hazard Identification

Classification	: Acute Toxicity, Inhalation; Category 4 Skin Corrosion; Category 1B Serious Eye Damage/Eye Irritation; Category 1 Specific Target Organ Toxicity (SINGLE EXPOSURE)[Respiratory tract irritation]; Category 3 Aquatic Toxicity (ACUTE); Category 2 Aquatic Toxicity (CHRONIC); Category 2
-----------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Signal Word : Danger



Pictogram(s) :

Hazard Statements	: H332 Harmful if inhaled. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. H411 Toxic to aquatic life with long lasting effects.
--------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Precautionary Statements	: P280 Wear protective gloves. Wear protective clothing. Wear eye/face protection. P271 Use only outdoors or in a well-ventilated area. P264 Wash hands thoroughly after handling. P391 Collect Spillage.
---------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Response : P304+P340+P312 IF INHALED: Remove victim to fresh air and keep

comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

P303+P361+P353+P363 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash all contaminated clothing before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Prevention : P273 Avoid release to the environment.
P261 Avoid breathing fumes, mists, vapors or spray.

Storage : P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal : P501 Dispose of contents and container in accordance with specified local, regional, national, and international regulations.

3. Composition/Information on Ingredients

For Ammonia Solutions 10-30%		
CAS Number	Ingredient Name	Weight %
7664-41-7	Anhydrous Ammonia	10-30
7732-18-5	Water	70-90

4. First Aid Measures

Summary of First Aid Measures

Ingestion : **Do Not Induce Vomiting.** If person is conscious, give large quantities of water and, if possible, diluted vinegar, lemon juice, orange juice, or other citric juices to neutralize the ammonia. Delay may cause perforation of esophagus or stomach. OBTAIN MEDICAL ATTENTION.

Inhalation : Remove victim to fresh air. Give oxygen if breathing is difficult. If breathing has stopped, start artificial respiration. Keep victim calm and resting. OBTAIN MEDICAL ATTENTION.

Skin : Apply water immediately to exposed areas of skin and continue for at least 30 minutes. Remove contaminated clothing while continuing to apply water. Do not apply salves or ointments to affected areas. OBTAIN MEDICAL ATTENTION.

Eyes : Immediately flush with flowing water for at least 30 minutes with the eyelids held apart. OBTAIN MEDICAL ATTENTION.

Medical Conditions : Ammonia is a respiratory irritant. Persons with impaired pulmonary function may be at increased risk from exposure.

Effects of Overexposure : Irritation and possible burns of the skin and mucous membranes.

Headache, salivation, nausea, and vomiting. Difficult or labored breathing and cough with bloody mucous discharge. Bronchitis, laryngitis, hemoptysis, and pulmonary edema or pneumonitis. Ulceration of the conjunctiva and cornea, and corneal and lenticular opacities. Damage to the eyes may be permanent.

Summary of Acute Health Hazards

- Ingestion** : May cause corrosion to the esophagus and stomach with perforation and peritonitis. Ingestion causes burning pain in mouth, throat, stomach, and thorax, constriction of throat, and coughing. This is soon followed by vomiting of blood or by passage of loose stools containing blood. Ingestion of 3-4 ml may be fatal.
- Inhalation** : If inhaled, will cause nausea, vomiting, breathing difficulty, and convulsions. Shock or loss of consciousness may result. Brief exposure to 5000 ppm may be fatal.
- Skin** : **Absorption**: Ammonia, because of its alkalinity and water solubility, tends to break down and disrupt the outer cell layers, permitting rapid penetration. Even so, ammonia is not a systemic poison and the effects will be limited to local effects.
Contact: Causes smarting of the skin and first-degree burns on short exposure. May cause second-degree burns on long exposure.
- Eyes** : Vapor is irritating to the eyes. Liquid will cause burns.
- Note to Physicians** : N/A

Summary of Chronic Health : N/A

5. Fire Fighting Measures

- Extinguishing** : Water spray or fog type streams. Chemical or CO₂ should be used on small fires only. Use water to keep fire exposed containers cool and to protect men affecting the shut off.
- Special Exposure** : The presence of oil or other combustible materials will increase the fire hazard. The explosive (flammable) range of ammonia is broadened by a mixture of oxygen replacing air, and by temperature and pressure higher than atmospheric. Stop the flow of liquid. Approach fire upwind and evacuate area downwind if needed.
- Hazards**
- Special Protective Equipment for Firefighters** : Wear self-contained breathing apparatus and full protective clothing.
- Fire Fighting Procedures** : N/A
- NFPA Rating** : Health - 3

Flammability - 1
Instability - 0



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

NFPA Rating is for Ammonia, Anhydrous, Liquefied Gas only. Ammonia Solutions are not rated by the NFPA (National Fire Protection Association).

Uniform Fire Code Rating

: N/A

6. Accidental Release Measures

Personal Precautions

: Approach spill from upwind and evacuate area downwind.

Emergency Procedures

: Stop the flow.

Methods of Containment And Clean-Up

: Dike to contain spill. Dilute with water, if necessary to reduce ammonia vaporization. Can be neutralized with dilute phosphoric or sulfuric acids. Vinegar will effectively neutralize small spills of aqua ammonia. Prevent runoff from entering streams, drinking water supply or sewers.

7. Handling and Storage

Safe Handling

: Avoid heating containers of aqua ammonia. Avoid contact with skin and eyes. Avoid inhalation of vapors.

Storage

: Avoid storing in close proximity to strong acids.

Work/Hygienic

: Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands before eating, drinking, or using restroom. Do NOT place food, coffee or other drinks in the area where dusting or splashing of solutions is possible.

Practices

Ventilation

: Local exhaust is essential. Spark-proof fans desirable with mechanical ventilation. Ducts should be located at ceiling level and lead upwards to the outside. Local exhaust must be adequate to reduce ammonia concentration below 25 ppm.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

Chemical Name: Anhydrous Ammonia				
Exposure Limits (TWAs) in Air				
CAS Number	IDLH	ACGIH TLV	OSHA PEL	STEL
7664-41-7	300	25 ppm	50 ppm	35 ppm

Protective Equipment

: Eyewash fountain and safety shower should be available in the work area. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Neoprene and nitrile rubber are recommended materials. Polyvinyl alcohol is not recommended.

Eye Protection

: Tight fitting chemical safety and splash-proof goggles and/or a splash-proof face shield must be worn if there is a likelihood of exposure. Persons subject to ammonia exposure must not wear contact lenses.

Respiratory Protection

: Unless ventilation is adequate to keep airborne concentrations below the exposure standard, wear approved respiratory protection such as an ammonia canister mask or an approved air supplied respirator. Canister or cartridge type masks must not be used above their exposure limits. From 0 -199 ppm, a cartridge type ½ mask respirator is needed. From 200-299 ppm a type "N" gas mask with full face piece is needed. Over 300 ppm a self-contained breathing apparatus (SCBA) is required.

9. Physical and Chemical Properties

Physical State	Liquid	Molecular Weight	
Colour	Clear; Transparent	Weight %	10-30% NH ₃
Odour	Pungent	Odour Threshold	5 ppm
pH	12-14	Vapor Pressure	3-10 PSI @ 16 °C
Relative Density (water =1)	0.9590 -0.8950 @ 16 C (60°F)	Vapor Density (air=1)	0.60 @ 0°C
Viscosity	<1.7 centipoise @ 16 C (60°F)	VOC(g/ml)	100%
Boiling Point/Range (°C)	28°C	Auto-ignition Temperature(°C)	650°C
Melting Point/Range(°C)	-72°C	Evaporation Rate	
Flash Point	NA	Explosive Limits (% , v/v)	16-25% ammonia vapors
Explosive Properties	NA	Oxidizing Properties	NA
Water Solubility	Complete	Partition Coefficient (log Pow)	NA

10. Stability and Reactivity

Reactivity

: Ammonia is lightly reactive, easily undergoing oxidation, substitution and addition reactions.

Chemical Stability

: Material generally considered stable. Heating over ambient temperatures

causes vapor pressure of ammonia to increase rapidly. Stable

Possibility of Hazardous Reactions or Polymerizations : Hazardous polymerization will not occur

Conditions to Avoid : Heat, open flames, and electrical equipment and fixtures which are not vapor-proof or grounded.

Incompatible Materials : Avoid strong acids. Ammonia will react with bromine, chlorine, mercury, silver, and bleach to form explosive compounds. Avoid use of metals containing copper, zinc, and brass.

Hazardous Decomposition Products : Combustion of ammonia will yield small amounts of nitrogen and water.

11. Toxicological Information

Acute and Chronic Effects : See Section 4

Routes of Exposure

Ingestion : Yes
Inhalation : Yes
Skin : Yes
Eyes : Yes

Symptoms related to Physical, Chemical & Toxicological Characteristics : Burning of the eyes, conjunctivitis, skin irritation, swelling of the eyelids and lips, dry red mouth and tongue, burning in the throat, and coughing. In more severe cases of exposure, difficulty in breathing, signs and symptoms of lung congestion, and, ultimately, death from respiratory failure due to pulmonary edema may occur.

Numerical Measures of Toxicity : Toxicity by Ingestion: Oral rat, LD50: 350 mg/kg

Chronic Toxicity : N/A

Carcinogenicity : N/A

Product Name: Aqua Ammonia Solutions					
ACGIH	IARC	EPA	NIOSH	NTP	OSHA
No	No	No	No	No	No

Target Organs : N/A

12. Ecological Information

Ecotoxicity : Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Do not contaminate any body of water by direct application, cleaning of equipment or disposal.

Persistence and Degradability : N/A

Bioaccumulative Potential :

Product/Ingredient	Log Pow	BCF	Potential
N/A	N/A	N/A	N/A

Mobility in Soil : N/A

13. Disposal Considerations

Disposal of Container : Consult federal, state, or local authorities for proper disposal procedures.

14. Transport Information

UN# : UN2672
Proper Shipping Name : Ammonia Solutions
Hazard Class/Division : 8
Packing Group : III
Marine Pollutant : Yes
Special Precautions : N/A
Emergency Response Guidebook : N/A
Placard Advisory : 2012 ERG, Guide 154, pages 246-247



15. Regulatory Information


Section 302 Extremely Hazardous Substance (EHS) : N/A
Section 304 Extremely Hazardous Substance (EHS) : N/A
CERCLA Hazardous Substance : N/A

Section 313 Supplier : This product contains the following toxic chemical(s) subject to the reporting requirements of SARA TITLE III Section 313 of the Emergency Planning and Community Right-To Know Act of 1986 and of 40 CFR 372:

<u>CAS #</u>	<u>Chemical Name</u>	<u>% By Weight</u>
1336-21-6	Ammonium Hydroxide	10-30%

Clean Air Act (CAA) : N/A
California Prop 65 : N/A

- TSCA** : All substances in this product are listed in the Chemical Substance Inventory of the Toxic Substances Control Act.
- Label Warning** : Corrosive
- EPA Registration** : N/A
- Toxicity by Ingestion** : Oral rat, LD50: 350 mg/kg
- IDLH Value** : 300 ppm (The Immediately Dangerous to Life and Health Value)
- Reportable Quantity** : 1000 Pounds (454 Kilograms)

	Maximum use level for Ammonium Hydroxide under NSF/ANSI Standard 60		
	Ammonium Hydroxide 19%	Maximum use	26 mg/L
	Ammonium Hydroxide 20%	Maximum use	25 mg/L
	Ammonium Hydroxide 29.45%	Maximum use	17 mg/L
	Ammonium Hydroxide 26° be	Maximum use	17 mg/L
	Ammonium Hydroxide 24.5%*	Maximum use	20 mg/L
*NSF certification for 24.5% applies to Aqua Ammonia produced at the San Jose facility only.			

16. Other Information

- Revision date** : 08/18/2016
- Supersedes** : 06/22/2016
- First Issue** : 01/02/1986
- Chemical Family/Type** : Inorganic Bases
- Section(s) changed since last revision** : Section 9

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.



Safety Data Sheet

1. Product Identifier and Company Identification

Product name	: Liquid Ammonium Sulfate 40%	
HBCC SDS number	: CA06800	
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 1675 North Main Street Orange, California 92867 714-998-8800 – Office 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	: http://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 %
7732-18-5	Water	60%
7783-20-2	Ammonium Sulfate	40%

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	: Remove affected clothing and wash all exposed skin area with mild soap and water. Get medical attention if symptoms develop or persist.

- Eyes** : 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

: Keep unnecessary personnel away. Keep people away from and upwind of spill or leak. Wear appropriate PPE and clothing during cleanup. Ensure adequate ventilation. Evacuate unnecessary personnel. Equip cleanup crew with proper protection. Ventilate area.

Methods of Containment And Clean-Up

: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

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 Protection

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

: Chemical goggles or safety glasses.

Respiratory Protection

: Wear appropriate respiratory equipment.



9. Physical and Chemical Properties

Appearance: A clear, colorless liquid	Odor: Odorless
Odor Threshold: N/A	pH: 2.7
Melting Point/Freezing Point: 0°F	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
Relative Density: 10.25 lbs/gallon	Solubility in Water: 77g/100ml
Partition Coefficient: N/A	Autoignition Temperature: N/A
Decomposition Temperature: N/A	Viscosity: N/A
% Volatiles: 60% estimated	Specific Gravity (Water=1): 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** : Nor 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 Solution 40%:
 LD50 (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 of Container : Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.



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 to 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 Toxic 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



16. Other Information

Revision Date : 11/02/2017
Supersedes : 11/04/2016
First Issue : 11/04/2016

Chemical Family/Type : Inorganic Salt

Section(s) changed since last revision : Sections 1 and 9

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.

