

NOTICE TO BIDDERS

The City of Donna will receive **SEALED BIDS** addressed to **Utilities Department**, and submitted to the City Secretary's Office located on the 307 South 12th Street, Donna, Texas, 78537 until **3:00 p.m. on September 19, 2024**, for Supply Contract for Purchase of Liquid Ammonium Sulfate. Any bid received after the closing time will not be accepted and returned to the bidder unopened.

SUPPLY CONTRACT FOR PURCHASE OF LIQUID AMMONIUM SULFATE Bid No.: 2024-009

Specifications may be obtained from the City of Donna Utilities Department at 114 S 13th St, Donna, TX 78537 or by calling (956) 464-7861, Monday thru Friday between 8:00 am to 5:00 pm. If any questions, please contact Jonas Gonzalez, Utilities Director at (956) 464-7861.

The City of Donna reserves the right to refuse and reject any of all formalities or technicalities or to accept the bid it considers being best and most advantageous to the city, and holding the bids for a period of 30 days without taking action. Bids submitted past the after mentioned date and time will not be accepted.

Bid proposals must be clearly marked on the envelope

CITY OF DONNA
SPECIFICATIONS FOR A SUPPLY CONTRACT
FOR THE PURCHASE OF LIQUID AMMONIUM SULFATE

1. Contractor proposes and offers to furnish to the City of Donna all of the City's Liquid Ammonium Sulfate (LAS) needs at unit prices stated on bid form official date of award to end of September 2026. Prices quoted are to remain unchanged for the awarded term. Contract shall commence from the official date award and last for the term specified above. The City of Donna reserves the right to extend the Supply Contract for an additional two (2) contract periods, if the satisfactory and their unit prices (s) remain firm. Renewals of contract terms shall be based on City of Donna fiscal years 1. October 2024-end of September 2025 and 2. October 2025-September 2026. If price remains firm the City of Donna reserves the right to continue to extend the contract for additional one-year terms.
2. The purpose of these specifications is to select and purchase LAS for the production of chloramines on a cost per pound (lbs) basis. The City has developed the following criteria to insure a fixed cost of treatment and that bids received are from experienced chemical suppliers.
3. All specifications shown are minimum. There are no attentions to disqualify any bidder who can meet these qualifications.
4. Each shipment of LAS shall always contain a minimum of 38% content of Ammonium Sulfate. Any content below said minimum shall be considered a breach of contract. All chemicals used in treatment of water supplied by public water systems must conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 60 for direct additives and ANSI/NSF Standard 61 for indirect additives. Certificate of analysis from a third party, of product received must be provided for each shipment received.
5. A Material Safety Data Sheet (MSDS) must accompany each shipment.
6. Bidders must (if required) conduct an in plant testing their LAS for no less than 10 days. The cost for the chemical purchased will be paid for by the City of Donna; bidders must supply a reference list of five (5) customers presently using their LAS. Any problems with LAS, such as chemical (s) not reacting with LAS to form chloramines, during the tested shall be vendor's responsibility. Failure to meet performance factor may disqualify vendor. Bidder's LAS must meet all performance specifications to receive monetary compensation for the product used during the qualification process. Cost will be based on a liquid pound of LAS.
7. Bidder must provide temporary storage tanks, metering pumps, and infrastructure associated with the application during the trial of LAS.
8. During the trial period, the water plant staff will provide a log sheet documenting all LAS dosage, adjustments Trihalomethane formation and chloramines residual. The Water Treatment Plant Supervisor and his/her designated representative shall make LAS dosage adjustments requested by vendor or as deemed necessary to maintain water disinfection quality and meet parameters set by TCEQ.

9. Liquid Ammonium sulfate must be a minimum of 38% weight ammonium sulfate. Consistently maintain Total Liquid Ammonium Sulfate levels at a 3 to 1 ratio. Specific Gravity 1.20-1.228 and a pH 3.0-6.0. Certificate of Analysis shall accompany each bulk shipment.
10. No dry Ammonium Sulfate will be accepted.
11. The City require provider of these services to meet all specifications. In the event the provider is unable to provide all specified obligations of this Contract, the City may award contract to the next lower Bidder.
12. Provider, if requested, must also provide proper training, acceptable to City of Donna in the application and handling of this chemical.
13. All deliveries shall be coordinated by the contractor to the locations designated by the City personnel at time of order.
14. Deliveries will only be accepted during business operating hours of Monday-Friday between the hours of 8:00 am to 5:00 pm. Any other time must be requested with ample time.
15. The material shall be shipped in clean bulk tank trucks (minimum shipment of 2000 gallons). Each load delivery must include proof that tanker was washed before being filling with LAS. The Bidder must verify the equipment requirements prior to submittal of bids and ensure ability to deliver the proposed material in a vehicle, which is compatible with the existing unloading system.
16. The vendor agrees to assure that his/her carrier has all appropriate equipment such as tools, hoses, valves, and suitable hydraulic or electrical devices capable of insuring a timely unloading as not to interrupt the normal operation of the WTP.
17. The Contractor agrees to make deliveries only upon receipt of duly signed and approved Purchase Order (s) issued by the City. Delivery made without such Purchase Order shall be at the Bidder's risk and shall leave the City the option of canceling and Contract implied or expressed herein.
18. Contractor shall guarantee to assure that either his/her own carrier or any common carrier used shall be covered by all appropriate insurance required by any and all State and Federal agencies for the transportation of hazardous chemicals. The Contractor shall further guarantee to assure that all vehicles are properly placarded and /or labeled and suitably maintained and equipped for the transportation of hazardous chemicals. Delivery shall be made within three (3) calendar days after order is placed.
19. All invoices must be submitted in duplicate, itemized as to quantity, part number, description, and applicable discount (if any). In addition, invoices must show the

name of the Department, Division, or Section to which the merchandise was delivered, and the City's Purchase Order Number.

20. All delivery tickets must be signed by the receiving employee and have a description of the commodity delivered.

21. Payment shall be made in accordance with the State of Texas Pay Law after the City has approved the invoice or after the City has accepted the goods, whichever, occurs later. The city and Contractor agree that the terms of this contract all rights otherwise reserved by law, shall constitute the sole, controlling contract terms.

22. The contract may be terminated by the City, at its option, upon thirty (30) days written notice, if the materials furnished do not conform to the standard set forth herein, or if the deliveries and servicing of this Contract do not conform to the requirements detailed herein.

Print or Type Name and Title

Signature

Date

Company

CITY OF DONNA

**BID FORM FOR A SUPPLY CONTRACT FOR THE PURCHASE OF
LIQUID AMMONIUM SULFATE**

I/We submit the following bid for the purchase of Liquid Ammonium Sulfate according to the City of Donna specification, less tax:

It is understood that the number of pounds of Liquid Ammonium Sulfate are based on historical usage and is provided as an aid to assist bidders in providing the City of Donna with the best unit price. Actual usage may vary up or down during the course of the contract period. Price quoted is to remain unchanged for a period of two years from date of award of contract. Unit prices quoted shall be F.O.B. City of Donna and delivered to locations and exact spot (s) designated by City personnel.

Base Bid

HISTORICAL ANNUAL USAGE

280,000 lbs Per Year

Unit price per pound and put in place \$ _____

Unit price for two (2) year period with the provision to extend an additional two (2) year pending City Commission approval.

Maximum delivery time (not to exceed two calendar days) to Donna sites after receiving order by telephone ____ hours.

Delivery and quantity to be on an as needed basis.

Is bidder able and willing to make deliveries on weekends and/or holidays at contract unit price? Yes ____ No ____.

Please identify the name of person to contact in case of an emergency and the telephone number where this person can be reached _____.

Please identify hour of operation _____.

Please identify name of person (s) authorized to receive orders: _____

Bidder's Company Name _____

Unit Price per lbs as needed delivered and put in place \$ _____

Delivery Time (hours or days) _____

Able to deliver 365 days a year (Yes or No) _____

Respectfully submitted this _____ day of _____, 2024.

SIGNATURE: _____

PRINT/TYPE NAME: _____

TITLE: _____

COMPANY: _____

ADDRESS: _____

TELEPHONE NO: _____

FAX NUMBER: _____

EMAIL ADDRESS: _____



Liquid Ammonium Sulfate

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.
Revision Date: 05/07/2018 Date of Issue: 05/01/2015

Version: 4.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Liquid Ammonium Sulfate

Intended Use of the Product

Municipal and industrial water and wastewater treatment for disinfection as a source of ammonia in chloramination. Disinfection byproduct control.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.

155 Gordon Baker Road

Suite 300

Toronto, Ontario M2H 3N5

For SDS Info: (416) 496-5856

www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number :

Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300

INTERNATIONAL: +1-703-741-5970

Chemtrade Emergency Contact: (866) 416-4404

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Aquatic Acute 2 H401

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Statements

: H401 - Toxic to aquatic life.

Precautionary Statements

: P273 - Avoid release to the environment.

P501 - Dispose of contents/container in accordance with local, regional, national, provincial, territorial and international regulations.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Water	(CAS No) 7732-18-5	39.9 – 69.0	Not classified
Ammonium sulfate	(CAS No) 7783-20-2	30 - 60 ⁺	Aquatic Acute 2, H401
Citric acid	(CAS No) 77-92-9	0.1 to 1 ⁺	Eye Irrit. 2A, H319 Comb. Dust

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

*The actual concentration of the ingredient(s) is withheld as a trade secret in accordance with the Hazardous Products Regulations (HPR) SOR/2015-17 and 29 CFR 1910.1200.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

Liquid Ammonium Sulfate

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: Prolonged exposure may cause skin irritation.

Eye Contact: May cause slight irritation to eyes.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: At temperatures of 235 °C (455 °F) ammonia can be emitted. Sulfur oxides.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapor, mist, spray).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Liquid Ammonium Sulfate

Safety Data Sheet

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Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Handle in accordance with standard industrial practices, and ensure appropriate ventilation. Avoid all contact with skin, eyes, clothing. Do not release into the environment.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapors, mist, spray.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures and incompatible materials.

Incompatible Materials: Alkalies, alkalinizing substances, nitrites and alkaline substances, oxidizers.

Specific End Use(s)

Municipal and industrial water and wastewater treatment for disinfection as a source of ammonia in chloramination. Disinfection byproduct control.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Exposure Controls

Appropriate 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. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles.



Materials for Protective Clothing: Chemically resistant materials and fabrics

Hand Protection: Wear protective gloves.

Eye Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, faint yellow to amber colored
Odor	: Odorless
Odor Threshold	: Not available
pH	: 3 - 7
Evaporation Rate	: Not available
Melting Point	: Not applicable
Freezing Point	: -12 °C (10.4 °F)
Boiling Point	: Not available
Flash Point	: Not available

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Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not applicable
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20°C	: Not available
Specific Gravity	: 1.216 - 1.228
Solubility	: Not available
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures and incompatible materials.

Incompatible Materials: Alkalies, alkalizing substances, nitrites and alkaline substances, oxidizers.

Hazardous Decomposition Products: None expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

pH: 3 - 7

Eye Damage/Irritation: Not classified

pH: 3 - 7

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Effects After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Effects After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Effects After Eye Contact: May cause slight irritation to eyes.

Symptoms/Effects After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Ammonium sulfate (7783-20-2)	
LD50 Oral Rat	> 2000 mg/kg
Citric acid (77-92-9)	
LD50 Oral Rat	5400 mg/kg
LD50 Dermal Rat	> 2000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Toxic to aquatic life.

Liquid Ammonium Sulfate

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Ammonium sulfate (7783-20-2)	
LC50 Fish 1	5.2 (5.2 - 8.2) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])
EC50 Daphnia 1	14 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	32.2 (32.2 - 41.9) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])
Citric acid (77-92-9)	
LC50 Fish 1	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

Persistence and Degradability

Liquid Ammonium Sulfate	
Persistence and Degradability	Not established.
Citric acid (77-92-9)	
Persistence and Degradability	Readily biodegradable in water.

Bioaccumulative Potential

Liquid Ammonium Sulfate	
Bioaccumulative Potential	Not established.
Ammonium sulfate (7783-20-2)	
Log Pow	-5.1 (at 25 °C)
Citric acid (77-92-9)	
Log Pow	-1.72 (at 20 °C)

Mobility in Soil

Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

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

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

Not regulated for transport according to: US DOT, IMDG, IATA, and Canada's TDG.

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Ammonium sulfate (7783-20-2)	Not present	Not present	Not present	No
Citric acid (77-92-9)	Not present	Not present	Not present	No

US TSCA Flags

Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Ammonium sulfate (7783-20-2)	No	No	No	No
Citric acid (77-92-9)	No	No	No	No

State Right-To-Know Lists

Ammonium sulfate (7783-20-2)

Liquid Ammonium Sulfate

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

U.S. - Massachusetts - Right To Know List - Yes
 U.S. - New Jersey - Right to Know Hazardous Substance List - No
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes
 U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
 U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Citric acid (77-92-9)

U.S. - Massachusetts - Right To Know List - No
 U.S. - New Jersey - Right to Know Hazardous Substance List - No
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - No
 U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No
 U.S. - Pennsylvania - RTK (Right to Know) List - No

Canadian Regulations

Ammonium sulfate (7783-20-2)

Listed on the Canadian DSL (Domestic Substances List)
 Not listed on the Canadian NDSL (Non-Domestic Substances List)

Citric acid (77-92-9)

Listed on the Canadian DSL (Domestic Substances List)
 Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Ammonium sulfate (7783-20-2)	Yes	Yes	Yes	Yes	No	No	No	Yes
Citric acid (77-92-9)	Yes	Yes	Yes	Yes	No	No	No	Yes

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Ammonium sulfate (7783-20-2)	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Citric acid (77-92-9)	Yes	Yes	No	No	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 05/07/2018

Revision Summary

Section	Change	Date Changed
3	HPR trade secret statement	05/07/2018
16	NFPA HMIR information	05/07/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
H319	Causes serious eye irritation
H401	Toxic to aquatic life

NFPA 704

NFPA Health Hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

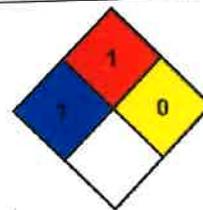
NFPA Fire Hazard : 1 - Must be preheated before ignition can occur.

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NFPA Reactivity Hazard : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 1 Slight Hazard

Physical

: 0 Minimal Hazard

PPE

See Section 8

Abbreviations and Acronyms

AICS - Australian Inventory of Chemical Substances
ACGIH - American Conference of Governmental Industrial Hygienists
AIHA - American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT - 49 CFR - US Department of Transportation - Code of Federal Regulations Title 49 - Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
EPA - Environmental Protection Agency
EPCRA 304 RQ - EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act - Reportable Quantity
ERAP Index - Emergency Response Assistance Plan Quantity Limit
ErC50 - EC50 in Terms of Reduction Growth Rate
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)
ERG No. - Emergency Response Guide Number
HCCL - Hazard Communication Carcinogen List
HMIS - Hazardous Materials Information System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association - Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China
IMDG - International Maritime Dangerous Goods Code
INSQ - Mexican National Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law

LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
Log Pow - Octanol/water Partition Coefficient
NFPA 704 - National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - National Institute for Occupational Safety and Health
NLP - Europe No Longer Polymers List
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE - Personal Protective Equipment
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
SARA 313 - Section 313, 40 CFR Part 372
SRCL - Specifically Regulated Carcinogen List
STEL - Short Term Exposure Limit
SVHC - European Candidate List of Substance of Very High Concern
TDG - Transport Canada Transport of Dangerous Goods Regulations
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TSCA - United States Toxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.

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Liquid Ammonium Sulfate

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

