spectrum
chemicals & laboratory products

A Division of Spectrum Chemical Mfg. Corp.

Dear Customer,

This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI[1] format to the GHS[2] format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

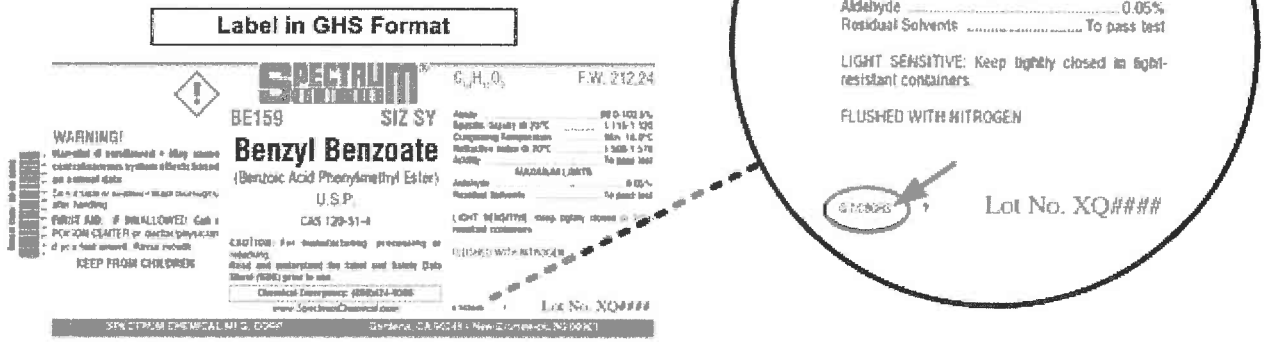
Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond.
   ANSI labels: pictograms, if present, will be inside individual black boxes.
2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number.
   Directly to the left will be a string of control characters, followed by a single letter.
   For GHS labels, the string of characters will end in "GHS:"

Label in ANSI Format

CORPORATE OFFICES
14422 South San Pedro Street
Gardena, California 90248
PHONE 310.516.8000
FAX 310.516.9843

Label in GHS Format



[1] American National Standards Institute
[2] Globally Harmonized System for Hazard Communication

Sincerely,

Regulatory Affairs

SAFETY DATA SHEET

Preparation Date: 03/03/2015 **Revision Date:** 03/03/2015 **Revision Number:** G1

Product identifier

Product code: A1220
Product Name: AMMONIUM OXALATE, MONOHYDRATE, CRYSTAL, REAGENT, ACS

Other means of identification

Synonyms: Ethanedioic acid diammonium salt, monohydrate
Ammonium oxalate
Diammonium oxalate monohydrate
Ammonium oxalate hydrate
Diammonium oxalate
Oxalic acid, diammonium salt
Oxalate of ammonia
CAS #: 6009-70-7
RTECS # RO2750000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Electrolytic detinning of iron.
Uses advised against No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000
Order Online At: https://www.spectrumchemical.com

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Label elements

Warning

Hazard statements
Harmful if swallowed
Harmful in contact with skin
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Specific measures (see .? on this label)
Specific treatment (see .? on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of soap and water
Call a POISON CENTER or doctor/physician if you feel unwell
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Ammonium Oxalate, Monohydrate 6009-70-7	6009-70-7	100	*

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation. Eye contact may result in redness or pain. Causes skin irritation. Skin contact may result in redness, pain, inflammation, itching, scaling. Irritating to respiratory system. Coughing. Dyspnea (Shortness of breath and difficulty breathing). Harmful if swallowed. Harmful in contact with skin. Central nervous system effects. Drowsiness. Seizures. Twitching. May affect the cardiovascular system. May affect the liver. It may affect the kidneys. Causes digestive (gastrointestinal) tract irritation. Vomiting. May cause purging.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Nitrogen oxides; ammonia

Specific hazards: When heated to decomposition it emits toxic fumes

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Strong oxidizing agents. Strong acids. Sodium Hypochlorite.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Ammonium Oxalate, Monohydrate - 6009-70-7	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Ammonium Oxalate, Monohydrate - 6009-70-7	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Ammonium Oxalate, Monohydrate 6009-70-7	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles. Safety glasses with side-shields.

Skin and body protection: Long sleeved clothing. Chemical resistant apron. Gloves.

Respiratory protection: Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent. .

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid.

Appearance:
Crystals.

Color:
White.

Odor:
Odorless.

Taste
No information available

Molecular/Formula weight:
142.11

Formula:
C2H8O4N2•H2O

Flash point (°C):
No data available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Autoignition Temperature (°C/°F):
No information available

pH:
No information available

Melting point/range(°C/°F):
No information available

Boiling point/range(°C/°F):
No information available

Decomposition temperature(°C/°F):
70°C/158°F

Bulk density:
No information available

Specific gravity:
1.5

Vapor pressure @ 20°C (kPa):
No information available

Density (g/cm3):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Soluble in hot water
Partially soluble in cold water
Insoluble in Ammonia
Slightly soluble in alcohol
Solubility in Water: 1g/20mL at room temperature; 2.54g/100mL at 0°C; 11.8g/100mL at 50°C; 1g/2.6mL at boiling water

10. STABILITY AND REACTIVITY

Reactivity
Reactive with acids
Reactive with oxidizing agents

Chemical stability

Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Strong oxidizing agents. Strong acids. Sodium Hypochlorite.

Hazardous decomposition products: Ammonia. Nitrogen oxides (NOx).

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Ammonium Oxalate, Monohydrate - 6009-70-7

LD50/oral/rat = No information available
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No infomation available
Other LD50 or LC50information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = No information available

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:	Causes skin irritation.
Eye Contact:	Causes serious eye irritation.
Inhalation	Causes respiratory tract (nose, throat, lung) irritation with coughing and shortness of breath.

Ingestion Causes digestive (gastrointestinal) tract irritation. May cause vomiting and severe purging. Ingestion of large amounts (high concentrations) of oxalic acid salts may cause have a corrosive effect on the mucous membranes of the oropharynx and perhaps the esophagus. It may also affect behavior/central nervous system (tetany, seizures, muscle twitching, drowsiness, stupor, coma) and cause cardiovascular collapse. May also affect the liver, and cause kidney damage resulting in oliguria, anuria, hematuria, elevated liver enzymes, and liver necrosis.

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated exposure may cause cracking of the skin, dermatitis, and slow healing ulcers. Finger nails may become brittle and yellowish.
Prolonged or repeated inhalation may cause bronchitis to develop with cough, phlegm and/or shortness of breath.
Prolonged or repeated ingestion may lead to kidney stones and kidney damage and may affect liver..

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Ammonium Oxalate, Monohydrate	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure respiratory system. lungs. kidney.
STOT - repeated exposure No information available
Target Organs: Kidneys. Respiratory system. Lungs.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Ammonium Oxalate, Monohydrate	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Subsidiary Risk:	No information available
Packing Group:	None
ERG No:	No information available
Marine Pollutant	No data available
DOT RQ (lbs):	5000 lbs/2270 kg

TDG (Canada)

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Subsidiary Risk:	No information available
Packing Group:	No information available
Description:	No information available

ADR

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Packing Group:	No information available
Subsidiary Risk:	No information available
Classification Code:	No information available
Description:	No information available
CEFIC Tremcard No:	No information available

IMO / IMDG

UN-No:	Not Regulated
Proper Shipping Name:	No information available
Hazard Class:	No information available
Subsidiary Risk:	No information available
Packing Group:	No information available
Description:	No information available

14. TRANSPORT INFORMATION

IMDG Page: No information available
Marine Pollutant No information available
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Classification Code: No information available
Description: No information available

ICAO

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
Ammonium Oxalate, Monohydrate	Not Listed The monohydrate form (CAS no. 6009-70-7) is exempt from TSCA 8(b) Inventory listing since it is a hydrate. However, the anhydrous form (CAS no.1113-38-8) is listed on the TSCA 8(b) inventory	Not present	Present	Present (1)-391	Present	Present	Not present

U.S. Regulations

Ammonium Oxalate, Monohydrate

Massachusetts RTK: Present
New Jersey - Discharge Prevention - List of Hazardous Substances: Present

Ammonium Oxalate, Monohydrate

Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
New York Release Reporting - List of Hazardous Substances:
5000 lb RQ
100 lb RQ
Louisana Reportable Quantity List for Pollutants: 5000lbfinal RQ
2270kgfinal RQ
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Ammonium Oxalate, Monohydrate	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting *de minimis*
Ammonium Oxalate, Monohydrate	5000 lb final RQ 2270 kg final RQ	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Ammonium Oxalate, Monohydrate	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
D2B Toxic materials

Ammonium Oxalate, Monohydrate
D2B

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	Canada (DSL)	Canada (NDSL)
Ammonium Oxalate, Monohydrate	Not Listed	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting
Ammonium Oxalate, Monohydrate	Not listed	Not listed

EU Classification

R-phrase(s)
R-phrase(s)
R21/22 - Harmful in contact with skin and if swallowed.

S -phrase(s)
S 2 - Keep out of the reach of children.
S24/25 - Avoid contact with skin and eyes.

Components	Classification	Concentration Limits:	Safety Phrases
Ammonium Oxalate, Monohydrate	R:21/22	C>=5%	S:(2)-24/25

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xn - Harmful.

16. OTHER INFORMATION

16. OTHER INFORMATION

Preparation Date: 03/03/2015
Revision Date: 03/03/2015
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet

SPECTRUM®

ISO 9002 CERTIFIED

GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
	Health Hazard 2 Fire Hazard 0 Reactivity 0	 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Ammonium oxalate monohydrate**
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248
Commercial Name(s)	Not available.
Synonym	Ethanedioic acid diammonium salt, monohydrate
Chemical Name	Oxalic acid diammonium salt, monohydrate
Chemical Family	Not available.
Chemical Formula	(COONH4)2.H2O
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248

Catalog Number(s).	YY1060, A1220, A1221
CAS#	6009-70-7; 113-38-8 (anhydrous)
RTECS	RO2750000
TSCA	TSCA 8(b) inventory: No products were found. Anmonium Oxalate anhydrous CAS no. 1113-38-8 is listed on the TSCA inventory. Ammonium Oxalate monohydrate is not.
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300

CALL (310) 516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m³)**	**STEL (mg/m³)**	**CEIL (mg/m³)**	**% by Weight**
1) Ammonium oxalate monohydrate	6009-70-7; 113-38-8 (anhydrous)				100

Toxicological Data on Ingredients

Ammonium oxalate monohydrate
LD50: Not available.
LC50: Not available.

Continued on Next Page

Section 3. Hazards Identification

Potential Acute Health Effects	Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant).
Potential Chronic Health Effects	**CARCINOGENIC EFFECTS**: Not available. **MUTAGENIC EFFECTS**: Not available. **TERATOGENIC EFFECTS**: Not available. **DEVELOPMENTAL TOXICITY**: Not available. The substance may be toxic to kidneys, lungs, mucous membranes, skin, eyes. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.
Products of Combustion	Not available.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Not applicable.
Special Remarks on Fire Hazards	When heated to decomposition it emits toxic fumes of oxides of nitrogen
Special Remarks on Explosion Hazards	Not available.

Continued on Next Page

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystals solid.)	**Odor**	Odorless.
Molecular Weight	142.11 g/mole	**Taste**	Not available.
pH (1% soln/water)	Not available.	**Color**	White.
Boiling Point	Not available.		
Melting Point	Decomposition temperature: 70°C (158°F)		
Critical Temperature	Not available.		
Specific Gravity	1.5 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		
Solubility	Soluble in hot water. Partially soluble in cold water. Insoluble in ammonia. Slightly soluble in alcohol. Solubility in Water: 1 g/20 ml water at room tempurature; 2.54 g/ 100 ml water @ 0 deg. C.; 11.8 g/100 ml water @ 50 deg. C.; 1 g/2.6 ml boiling water.		

Continued on Next Page

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Incompatible materials, dust generation
Incompatibility with various substances	Reactive with oxidizing agents, acids.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Incompatible with sodium hypochlorite + ammonium acetate.
Special Remarks on Corrosivity	Oxalates slowly corrode steel
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Inhalation. Ingestion.
Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	May cause damage to the following organs: kidneys, lungs, mucous membranes, skin, eyes.
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes skin irritation. May cause ulceration. Eyes: Causes eye irritation. Inhalation: Causes respiratory tract (nose, throat, lung) irritation with coughing and shortness of breath. Ingestion: Ingestion of large amounts (high concentrations) of oxalic acid salts may cause have a corrosive effect on the mucous membranes of the oropharynx and perhaps the esophagus. It may also affect behavior/central nervous system (tetany, seizures, muscle twitching, drowsiness, stupor, coma) and cause cardiovascular collapse. May also affect the liver, and cause kidney damage resulting in oliguria, anuria, hematuria, elevated liver enzymes, and liver necrosis. Chronic Potential Health Effects: Skin: Prolonged or repeated exposure may cause cracking of the skin, dermatitis, and slow healing ulcers. Finger nails may become brittle and yellowish. Inhalation: Prolonged or repeated inhalation may cause bronchitis to develop with cough, phlegm and/or shortness of breath. Ingestion: Prolonged or repeated ingestion may lead to kidney stones and kidney damage and may affect liver.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.

Continued on Next Page

Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification	Not a DOT controlled material (United States).
Identification	Not applicable.
Special Provisions for Transport	Not applicable.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Illinois chemical safety act: Listed as Ammonium oxalate (CAS no. 1113-38-8)
Pennsylvania RTK: Ammonium oxalate or Ethanedioic acid, ammonium salt (CAS no. 1113-38-8)
Massachusetts RTK: Listed as Ammonium oxalate (CAS no. 1113-38-8)
Massachusetts spill list: Listed as Ammonium oxalate (CAS no. 1113-38-8)
New Jersey: Listed as Ammonium oxalate (CAS no. 1113-38-8)
New Jersey spill list: Listed as Ammonium oxalate monohydrate
Louisiana spill reporting: Listed as Ammonium oxalate (CAS no. 1113-38-8
California Director's List of Hazardous Substances: Ammonium oxalate (CAS no. 1113-38-8)
CERCLA: Hazardous substances.: Ammonium oxalate monohydrate: 5000 lbs. (2268 kg)
TSCA Inventory(8b): Anmonium Oxalate anhydrous CAS no. 1113-38-8 is listed on the TSCA inventory. Ammonium Oxalate monohydrate is not.

California Proposition 65 Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 214-202-3: Listed as Diammonium oxalate (CAS no. 113-38-8). Ammonium Oxalate monohydrate (CAS no. 6009-70-7 is not listed on the European Inventory of Existing Commercial Chemical Substances).
CAS No. 113-38-8 (anhydrous) is found on the following lists.
Canada: Listed as Ethanedioic acid, ammonium salt on Canadian Domestic Substance List (DSL).
China: Listed as Ethanedioic acid, ammonium salt on National Inventory.
Japan: Listed as Ammonium oxalate on National Inventory (ENCS).
Korea: Listed as Ethanedioic acid, ammonium salt on Natioinal Inventory (KECI).
Philippines: Listed as Ethanedioic acid, ammonium salt on National Inventory (PICCS).
Australia: Listed as Ethanedioic acid, diammonium salt on AICS.
CAS no. 6009-70-7(monohydrate) is found on the following lists:
Australia: Listed as Ethanedioic acid, diammonium salt, monohydrate on AICS.

Other Classifications

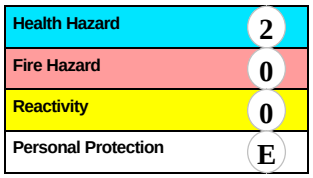
WHMIS (Canada) CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC)

Continued on Next Page

		R21/22- Harmful in contact with skin and if swallowed. R36/37- Irritating to eyes and respiratory system.	S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.)



National Fire Protection Association (U.S.A.)

Flammability
Health
Reactivity
Specific hazard

WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)

TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

Gloves.

Lab coat.

Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Continued on Next Page

Section 16. Other Information

MSDS Code	**A5200**
References	Not available.
Other Special Considerations	Not available.

Validated by Sonia Owen on 8/11/2006.

Verified by Sonia Owen.

Printed 9/8/2006.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.