

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name **FERROUS AMMONIUM SULFATE**

Other means of identification

Product Code(s) **6815**
UN-No **2796**

Recommended use of the chemical and restrictions on use

Recommended Use Use as a laboratory reagent. Laboratory chemicals. Industrial (not for food or food contact use).

Details of the supplier of the safety data sheet

Manufacturer Address
LaMotte Company, Inc.
802 Washington Avenue
P.O. Box 329
Chestertown, MD 21620 USA
T 410-778-3100
F 410-778-9748

Emergency telephone number

24 Hour Emergency Number (CHEM-TEL): USA, Canada, Puerto Rico 1-800-255-3924 Outside North American Continent (Call collect) 813-248-0585

2. HAZARDS IDENTIFICATION

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 2

EMERGENCY OVERVIEW

DANGER

Hazard statements

Causes severe skin burns and eye damage. May cause cancer. Suspected of damaging fertility or the unborn child.



Appearance Clear Pale green

Physical state liquid

Odor Odorless

Precautionary Statements - Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling.

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician.

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

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

IF SWALLOWED, Rinse mouth, Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant.

Other Hazards

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Cadmium	7440-43-9	<0.1 (a small chip)
Sulfuric acid	7664-93-9	1
Ferrous ammonium sulfate.6H2O	7783-85-9	3

WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm

4. FIRST AID MEASURES**First Aid Measures****General advice**

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Call a physician immediately.

Skin contact

Immediate medical attention is required. Wash off immediately with soap and plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse.

Inhalation

Remove to fresh air. Immediate medical attention is required. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Ingestion

Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Self-protection of the first aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protection recommended in Section 8.

5. FIRE-FIGHTING MEASURES**Suitable extinguishing media**

Dry chemical, CO₂, water spray or alcohol-resistant foam.

Protective equipment and precautions 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	Use personal protective equipment. Keep people away from and upwind of spill/leak.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling	Do not eat, drink, or smoke when using this product. Wear personal protective equipment. Avoid contact with eyes, skin and clothing. Take off contaminated clothing and wash before reuse. Do not breathe mist/vapors/spray.
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Conditions for safe storage, including any incompatibilities

Storage	Keep out of the reach of children. Keep container tightly closed in a dry and well-ventilated place.
Incompatible Products	Strong bases. Metals. Cyanides. Sulfides.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Cadmium 7440-43-9	TWA: 0.01 mg/m ³ TWA: 0.002 mg/m ³	TWA: 0.1 mg/m ³ TWA: 0.2 mg/m ³ TWA: 5 µg/m ³ Ceiling: 0.3 mg/m ³ Ceiling: 0.6 mg/m ³	IDLH: 9 mg/m ³
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m ³	TWA: 1 mg/m ³	IDLH: 15 mg/m ³ TWA: 1 mg/m ³
Ferrous ammonium sulfate.6H ₂ O 7783-85-9	TWA: 1 mg/m ³	-	TWA: 1 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Showers Eyewash stations Ventilation systems.
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Individual protection measures, such as personal protective equipment

Eye/Face Protection	Tightly fitting safety goggles.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

Hygiene Measures

Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with eyes, skin and clothing. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid		
Appearance	Clear Pale green	Odor	Odorless
Property	Values	Remarks • Method	
pH	1	No information available	
Melting point / freezing point	No information available		
Boiling point / boiling range	No information available		
Flash point	No information available		
Evaporation rate			
Flammability (solid, gas)	No information available		
Flammability Limit in Air			
Upper flammability limit:	No information available		
Lower flammability limit:	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific gravity	No information available		
Water solubility	No information available		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		
Explosive properties	No information available		
Oxidizing properties	No information available		

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Hazardous Reactions	Contact with metals may evolve flammable hydrogen gas.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat. Direct sunlight. Incompatible Products.
Incompatible materials	Strong bases. Metals. Cyanides. Sulfides.
Hazardous decomposition products	Hydrogen gas. Sulfur oxides (SOx). Carbon oxides (COx). Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Cadmium 7440-43-9	= 1140 mg/kg (Rat)	Not Established	= 25 mg/m ³ (Rat) 30 min
Sulfuric acid 7664-93-9	= 2140 mg/kg (Rat)	Not Established	= 510 mg/m ³ (Rat) 2 h
Ferrous ammonium sulfate.6H2O 7783-85-9	= 3250 mg/kg (Rat)	Not Established	Not Established

Information on toxicological effects**Carcinogenicity**

IARC has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions. This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical name	ACGIH	IARC	NTP	OSHA
Cadmium 7440-43-9	A2	Group 1	Known	X
Sulfuric acid 7664-93-9	A2	Group 1	Known	X
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established	Not Established	Not Established	Not Established

ACGIH (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP (National Toxicology Program)

Known - Known Carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Target organ effects

Eyes, Gastrointestinal tract (GI), liver, Respiratory System, Skin, Teeth.

ATEmix (oral) 75781

ATEmix (inhalation-dust/mist) 50.1 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Unknown Aquatic Toxicity 98.9 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Toxicity to Algae	Toxicity to Fish	Daphnia Magna (Water Flea)
Cadmium 7440-43-9	Not Established	0.0004 - 0.003: 96 h Pimephales promelas mg/L LC50 0.002: 96 h Cyprinus carpio mg/L LC50 0.003: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.006: 96 h Oncorhynchus mykiss mg/L LC50 static 0.016: 96 h Oryzias latipes mg/L LC50 0.24: 96 h Cyprinus carpio mg/L LC50 static 21.1: 96 h Lepomis macrochirus mg/L LC50 flow-through 4.26: 96 h Cyprinus carpio mg/L LC50 semi-static	0.0244: 48 h Daphnia magna mg/L EC50 Static
Sulfuric acid 7664-93-9	Not Established	500: 96 h Brachydanio rerio mg/L LC50 static	29: 24 h Daphnia magna mg/L EC50
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established	Not Established	Not Established

Persistence and degradability

No information available.

Bioaccumulation/Accumulation

Sulfuric acid - When released into the soil, this material may leach into ground water. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet or dry deposition.

Chemical name	Log Pow
Cadmium 7440-43-9	Not Established
Sulfuric acid 7664-93-9	Not Established
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established

13. DISPOSAL CONSIDERATIONS

Disposal Methods

See Section 6 for more information. Dispose of contents/containers in accordance with local regulations. Should not be released into the environment. Dispose of waste product or used containers according to local regulations.

Contaminated packaging

Do not reuse empty containers.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Cadmium 7440-43-9	(hazardous constituent - no waste number)	Included in waste streams: F006, F039, K061, K064, K065, K066, K069, K100	1.0 mg/L regulatory level	Not Established
Sulfuric acid 7664-93-9	Not Established	-	Not Established	Not Established
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established	-	Not Established	Not Established

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Cadmium 7440-43-9	Not Established	Not Established	Not Established	Not Established
Sulfuric acid 7664-93-9	Not Established	Not Established	Not Established	Not Established
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established	Not Established	Not Established	Not Established

Chemical name	California Hazardous Waste Status
Cadmium 7440-43-9	-
Sulfuric acid 7664-93-9	-
Ferrous ammonium sulfate.6H2O 7783-85-9	-

14. TRANSPORT INFORMATION

DOT

Proper shipping name SULFURIC ACID (< 51% ACID)
 UN-No 2796
 Hazard Class 8
 Packing group II
 Reportable Quantity (RQ) 1000

IATA

Proper shipping name SULFURIC ACID (< 51% ACID)
 UN-No 2796
 Hazard Class 8
 Packing group II

IMDG/IMO

Proper shipping name	SULFURIC ACID (< 51% ACID)
UN-No	2796
Hazard Class	8
Packing group	II

15. REGULATORY INFORMATION**International Inventories**

TSCA	Does not comply
DSL/NDL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Complies
KECL	Does not comply
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
 EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
 ENCS - Japan Existing and New Chemical Substances
 IECSC - China Inventory of Existing Chemical Substances
 KECL - Korean Existing and Evaluated Chemical Substances
 PICCS - Philippines Inventory of Chemicals and Chemical Substances
 AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Cadmium 7440-43-9	0.1
Sulfuric acid 7664-93-9	1.0
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Cadmium 7440-43-9	Not Established	X	X	Not Established
Sulfuric acid 7664-93-9	1000 lb	Not Established	Not Established	X
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established	Not Established	Not Established	Not Established

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ
Cadmium 7440-43-9	10 lb	Not Established	RQ 10 lb final RQ RQ 4.54 kg final RQ
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ
Ferrous ammonium sulfate.6H2O 7783-85-9	1000 lb	Not Established	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

WARNING! This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

California Proposition 65 has classified "strong inorganic acid mists containing sulfuric acid" as a chemical known to the State of California to cause cancer. This classification applies only to "inorganic mists containing sulfuric acid" and not to sulfuric acid or sulfuric acid solutions

Chemical name	California Proposition 65
Cadmium 7440-43-9	Carcinogen Developmental Male Reproductive
Sulfuric acid 7664-93-9	Carcinogen
Ferrous ammonium sulfate.6H2O 7783-85-9	Not Established

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Cadmium 7440-43-9	X	X	X
Sulfuric acid 7664-93-9	X	X	X
Ferrous ammonium sulfate.6H2O 7783-85-9	X	X	X

CPSC (Consumer Product Safety Commission) - Specially Regulated Substances

Chemical name	CPSC (Consumer Product Safety Commission) - Specially Regulated Substances
Cadmium 7440-43-9	Regulated, CPSIA Section 106 (must comply with ASTM F963-07)
Sulfuric acid 7664-93-9	Add POISON to label, 16 CFR 1500.129 (>=10%, free or chemically unneutralized)

16. OTHER INFORMATION

NFPA

Health hazard 1

Flammability 0

Instability 0

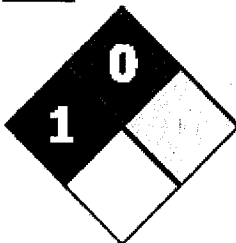
Physical and Chemical
Hazards N/A

HMIS

Health hazard 1

Flammability 0

Stability 1



Flammability	1
Explosivity	0
Reactivity	1

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Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Material Safety Data Sheet

