

SAFETY DATA SHEET

Preparation Date: 12/14/2015

Revision Date: 4/19/2017

Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: F-162
Product Name: FERROUS AMMONIUM SULFATE, 0.1 N SOLUTION, USP VOLUMETRIC SOLUTION

Other means of identification

Synonyms: No information available
CAS #: Mixture
RTECS # Not available
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 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 according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage
 May be corrosive to metals

**Hazards not otherwise classified (HNOC)**

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
Absorb spillage to prevent material damage
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
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 person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Water	7732-18-5	94.08
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	3.92
Sulfuric Acid	7664-93-9	2

4. FIRST AID MEASURES**First aid measures****General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact:

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical

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attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Follow with Milk of Magnesia or egg whites beaten with water. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns. Ingestion may cause vomiting and nausea. Abdominal pain. May cause metabolic acidosis. May affect the liver. It may affect the kidneys. Central nervous system effects.

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: No information available.

Specific hazards: For dilute Sulfuric acid:
White Phosphorous + boiling Sulfuric acid or its vapor ignites on contact.
May cause fire when sulfuric acid is mixed with Cyclopentadiene, cyclopentanone oxime, nitroaryl amines, hexalithium disilicide, phosphorous (III) oxide, and oxidizing agents such as chlorates, halogens, permanganates. Mixtures of sulfuric acid and any of the following can explode: p-nitrotoluene, pentasilver trihydroxydiaminophosphate, perchlorates, alcohols with strong hydrogen peroxide, ammonium tetraperoxychromate, mercuric nitrite, potassium chlorate,

potassium permanganate with potassium chloride, carbides, nitro compounds, nitrates, carbides, phosphorous, iodides, picratres, fulminates, dienes, alcohols (when heated)
1,3,5-Trinitrosohexahydro-1,3,5-triazine + sulfuric acid causes explosive decompositon.

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. Keep people away from and upwind of spill/leak. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Prevent from entering into soil, ditches, sewers, waterways, and/or ground water. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment

Stop leak if you can do it without risk.

Methods for cleaning up

Neutralize with Sodium carbonate or Sodium bicarbonate. Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. 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

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. 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. Store in a segregated and approved area. May corrode metallic surfaces. Do not store in uncoated metallic containers.

Incompatible Materials:

Oxidizing agents
Reducing agents

Bases
 Organic materials
 Combustible materials
 Amines
 Metals
 Strong acids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Water	7732-18-5	None	None	None	None
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	None	1 mg/m ³ TWA (as Fe)	1 mg/m ³ TWA (as Fe)	None
Sulfuric Acid	7664-93-9	1 mg/m ³ TWA	1 mg/m ³ TWA	0.2 mg/m ³ TWA thoracic fraction	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Water	7732-18-5	None	None	None	None
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	1 mg/m ³ TWA (as Fe)	2 mg/m ³ STEL (as Fe) 1 mg/m ³ TWA (as Fe)	1 mg/m ³ TWA (as Fe)	1.0 mg/m ³ TWAEV (as Fe)
Sulfuric Acid	7664-93-9	1 mg/m ³ TWA 3 mg/m ³ STEL	0.2 mg/m ³ TWA	0.2 mg/m ³ TWA thoracic	1 mg/m ³ TWAEV 3 mg/m ³ STEV

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Water	7732-18-5	None	None
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	1 mg/m ³ TWA (as Fe)	12 mg/m ³ STEL [LMPE-CT] (as Fe) 1 mg/m ³ TWA LMPE-PPT (as Fe)
Sulfuric Acid	7664-93-9	3 mg/m ³ STEL 1 mg/m ³ TWA	1 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Face-shield

Skin and body protection: Boots
 Chemical resistant apron

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Gloves
Long sleeved clothing

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: Clear.	Color: Light green.
Odor: Odorless.	Taste No information available.	Formula: No information available
Molecular/Formula weight: No information available	Flammability: No information available	Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): No information available	Decomposition temperature(°C/°F): No information available
Boiling point/range(°C/°F): >100°C/>212°F	Bulk density: No information available	Density (g/cm3): No information available
Specific gravity: No information available	pH: Acidic	Vapor pressure @ 20°C (kPa): 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: Easily soluble in water	

10. STABILITY AND REACTIVITY

Reactivity

For Sulfuric Acid:

It reacts with alcohols and amines

Incompatible (can react explosively or dangerously) with the following: ACETIC ACID, ACRYLIC ACID, AMMONIUM HYDROXIDE, CRESOL, CUMENE, DICHLOROETHYL ETHER, ETHYLENE CYANOHYDRIN, ETHYLENEIMINE, NITRIC ACID, 2-NITROPROPANE, PROPYLENE OXIDE, SULFOLANE, VINYLIDENE CHLORIDE, DIETHYLENE GLYCOL MONOMETHYL ETHER, ETHYL ACETATE, ETHYLENE CYANOHYDRIN, ETHYLENE GLYCOL MONOETHYL ETHER ACETATE, GLYOXAL, METHYL ETHYL KETONE, dehydrating agents, organic materials, moisture (water), Acetic anhydride, Acetone, cyanohydrin, Acetone+nitric acid, Acetone + potassium dichromate, Acetonitrile, Acrolein, Acrylonitrile, Acrylonitrile+water, Alcohols + hydrogen peroxide, ally compounds such as Allyl alcohol, and Allyl Chloride, 2-Aminoethanol, Ammonium hydroxide, Ammonium triperchromate, Aniline, Bromate + metals, Bromine pentafluoride, n-Butyraldehyde, Carbides, Cesium acetylene carbide, Chlorates, Cyclopentanone oxime, chlorinates, Chlorates + metals, Chlorine trifluoride, Chlorosulfonic acid, 2-cyano-4-nitrobenzenediazonium hydrogen sulfate, Cuprous nitride, p-chloronitrobenzene, 1,5-Dinitronaphthlene + sulfur, Diisobutylene, p-dimethylaminobenzaldehyde, 1,3-Diazidobenzene, Dimethylbenzylcarbinol + hydrogen peroxide, Epichlorohydrin, Ethyl alcohol + hydrogen peroxide, Ethylene diamine, Ethylene glycol and other glycols, , Ethylenimine, Fulminates, hydrogen peroxide, Hydrochloric acid, Hydrofluoric acid, Iodine heptafluoride, Indane + nitric acid, Iron, Isoprene, Lithium silicide, Mercuric nitride, Mesityl oxide, Mercury nitride, Metals (powdered), Nitromethane, Nitric acid + glycerides, p-Nitrotoluene, Pentasilver

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trihydroxydiaminophosphate, Perchlorates, Perchloric acid, Permanganates + benzene, 1-Phenyl-2-methylpropyl alcohol + hydrogen peroxide, Phosphorus, Phosphorus isocyanate, Picrates, Potassium tert-butoxide, Potassium chlorate, Potassium Permanganate and other permanganates, halogens, amines, Potassium Permanganate + Potassium chloride, Potassium Permanganate + water, Propiolactone (beta)-, Pyridine, Rubidium acetylethene carbide, Silver permanganate, Sodium, Sodium carbonate, sodium hydroxide, Steel, styrene monomer, toluene + nitric acid, Vinyl acetate, Thallium (I) azidodithiocarbonate, Zinc chlorate, Zinc Iodide, azides, carbonates, cyanides, sulfides, sulfites, alkali hydrides, carboxylic acid anhydrides, nitriles, olefinic organics, aqueous acids, cyclopentadiene, cyano-alcohols, metal acetylides
Evolves flammable hydrogen gas on contact with metals

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Incompatible materials.

Incompatible Materials: Oxidizing agents
Reducing agents
Bases
Organic materials
Combustible materials
Amines
Metals
Strong acids

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

Other Information

Corrosivity: For Sulfuric Acid:
Severe corrosive effect on 304 Stainless Steel
Slightly corrosive in presence of stainless steel (316)
Extremely corrosive in presence of aluminum
No corrosion data on brass
Minor corrosive effect on bronze

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Skin. Eyes. Inhalation.

Acute Toxicity

Component Information

Water	
CAS-No.	7732-18-5
LD50/oral/rat = > 90 mL/kg Oral LD50 Rat	
LD50/oral/mouse = No information available	
LD50/dermal/rabbit = No information available	

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

Ferrous Ammonium Sulfate, Hexahydrate	
CAS-No.	7783-85-9

LD50/oral/rat = 3250mg/kg oral LD50 rat
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 information available
Other LD50 or LC50information = No information available

Sulfuric Acid	
CAS-No.	7664-93-9

LD50/oral/rat = 2140 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = 347 ppm 1 h
420 ppm 1 h
510 mg/m³ Inhalation LC50 Rat 2h
LC50/inhalation/mouse = 320 mg/m³ 2 h
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 severe irritation and burns. Can cause burning pain, inflammation and blisters.

Eye Contact: Causes eye burns. Risk of serious damage to eyes. Can cause severe injury. May cause irreversible eye damage.

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Inhalation Can cause severe irritation of the respiratory tract and mucous membranes with sore throat, coughing, shortness of breath. May cause chemical burns (corrosive action) to the respiratory tract, spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. May affect cardiovascular system (hypotension, depressed cardiac output, bradycardia). May also affect teeth(changes in teeth and supporting structures - erosion, discoloration).

Ingestion Causes digestive or gastrointestinal tract burns. Corrosive to the mouth, throat, and stomach. May cause permanent damage to the digestive tract. May cause perforation of the digestive tract. May cause gastritis. May cause abdominal pain. Ingestion may cause nausea, vomiting. May cause metabolic acidosis. It may affect the kidneys and liver. May cause central nervous system effects (affect behavior).

Aspiration hazard No information available.

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

Chronic Toxicity For Sulfuric Acid: Inhalation: Prolonged or repeated inhalation may affect behavior (muscle contraction or spasticity), urinary system (kidney damage), and respiratory system/lungs(pulmonary edema, lung damage/changes in lung function with chronic bronchitis and emphysema), teeth (dental discoloration, erosion).
 Skin: Prolonged or repeated skin contact may cause dermatitis.
 Eyes: Conjunctivitis is also a common finding with chronic exposure. For Ferrous Ammonium Sulfate, hexahydrate: Repeated or prolonged ingestion of iron or iron salts results in increased accumulation of iron in the body, particularly the liver, spleen, and lymphatic system. It may cause Liver damage (Hemosiderosis in the liver), and rarely Hemochromatosis in the Kupffer cells of the liver. Chronic iron poisoning may also cause leukocytosis and anemia.
 Eyes: Prolonged eye contact may cause conjunctivitis. Prolonged eye contact may cause a brownish discoloration of the eyes.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: May cause cancer. However, evidence is inconclusive. Cancer Status: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC Group 1). However, this classification applies only to mists containing sulfuric acid generated during an industrial process and not to (almost) pure sulfuric acid or sulfuric acid solutions; The ACGIH has classified "strong inorganic acid mists containing sulfuric acid" as a suspected human carcinogen (ACGIH Group A2). However, this classification applies only to mists containing sulfuric acid generated during an industrial process and not to (almost) pure sulfuric acid or sulfuric acid solutions.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Sulfuric Acid	7664-93-9	Group 1 -	A2 Suspected	Not listed	Present	Not listed	Not listed

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		Monograph 54 [1992] occupational exposure to mists and vapours from sulfuric acid and other strong inorganic acids	Human Carcinogen (contained in strong inorganic acid mists)				
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ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

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

Reproductive toxicity

No data is available

**Reproductive Effects:
Developmental Effects:
Teratogenic Effects:**

No information available
No information available
For Sulfuric Acid:
Developmental effects and Teratogenicity: According the the Registry of Toxic Effects of Chemical Substances (RTECS reference - Murry et al, "Embryotoxicity of Inhaled Sulfuric Acid Aerosol in Mice and Rabbits", Journal of Environmental Science and Health, Part C, Vol. 13, pages 251-266, 1979), musculoskeletal developmental abnormalities were found in rabbits at a dose of 20 mg/m³ for 7 hrs. However, REPROTOX and Shepard's Catalog of Teratogenic Agents, citing this same study, stated that inhalation of sulfuric acid fumes did not increase congenital anomalies in the offspring of treated pregnant mice or rabbits. Furthermore, the Hazard Substance Data Bank (HSDB) also stated that in a developmental toxicity study conducted under a method similar to OECD test Guideline 414 that no significant effects on mean numbers of implants/dam, live fetuses/liter or resorptions/litter were observed in mice and rabbits exposed by inhalation to sulfuric acid aerosol at 5 and 20 mg/m³ during gestation and therefore could not be considered embryotoxic, or fetotoxic.

Specific Target Organ Toxicity

**STOT - single exposure
STOT - repeated exposure
Target Organs:**

No information available.
No information available.
Eyes. Liver. Skin. Teeth. Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Sulfuric Acid - 7664-93-9

Freshwater Fish Species Data: 500 mg/L LC50 Brachydanio rerio 96 h static 1

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

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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. Do not re-use empty containers
Dispose of as unused product.

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	7732-18-5	None	None	None	None
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	None	None	None	None
Sulfuric Acid	7664-93-9	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Subsidiary Class No information available
Packing group: II
Emergency Response Guide Number 154
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions B2, IB2, T11, TP2, TP27
Symbol(s): [DOT]: (R4) - Identifies a material that is a hazardous substance that has a reportable quantity (RQ) of 1000 pounds (454 Kilograms).
Description: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II

TDG (Canada)

UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No Information available
Description: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II

ADR

UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Packing Group: II
Subsidiary Risk: No information available
Special Provisions 274
Description: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II

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UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Marine Pollutant No information available
EMS: F-A
Special Provisions 274
Description UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II

RID

UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Special Provisions 274
Description: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II

ICAO

UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
Description: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II
Special Provisions A3

IATA

UN-No: UN3264
Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: II
ERG Code: 8L
Special Provisions No information available
Description: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Sulfuric Acid), 8, II

15. REGULATORY INFORMATION**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Water</i>	7732-18-5	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
<i>Ferrous Ammonium Sulfate, Hexahydrate</i>	7783-85-9	Not Listed	Not present	Present	Present (1)-400	Present	Present	Not present
<i>Sulfuric Acid</i>	7664-93-9	Present	Present KE-32570	Present	Present (1)-724 (1)-430	Present	Present	Present 231-639-5

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U.S. Regulations

Ferrous Ammonium Sulfate, Hexahydrate

Pennsylvania RTK: Environmental Hazard

Pennsylvania RTK - Environmental Hazard List Present

Minnesota - Hazardous Substance List: Present (as Fe)

California Directors List of Hazardous Substances: Present (refers only to water-soluble salts not mixed in food or animal feed)

Sulfuric Acid

Massachusetts RTK: Present

New Jersey RTK Hazardous Substance List: 1761

New Jersey (EHS) List: 1761 500 lb TPQ

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

Pennsylvania RTK: Environmental hazard

Pennsylvania RTK - Environmental Hazard List Present

Minnesota - Hazardous Substance List: Present

New York Release Reporting - List of Hazardous Substances:

1000 lb RQ

100 lb RQ

Louisiana Reportable Quantity List for Pollutants: 1000lbfinal RQ

454kgfinal RQ

California Directors List of Hazardous Substances: Present

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1095

FDA - 21 CFR - Total Food Additives 172.560 172.892 173.385 176.170 176.180 176.210 177.2800 178.1010 179.45
184.1095 73.85

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	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Water	7732-18-5	Not Listed	Not Listed	Not Listed	Not Listed
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	Not Listed	Not Listed	Not Listed	Not Listed
Sulfuric Acid	7664-93-9	Listed under strong inorganic mists containing sulfuric acid	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	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
Water	7732-18-5	None	None	None	None	None
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	None	None	None	None	None
Sulfuric Acid	7664-93-9	1000 lb final RQ 454 kg final RQ	1000 lb TPQ	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting

Product code: F-162

Product name: FERROUS
AMMONIUM SULFATE, 0.1 N
SOLUTION, USP VOLUMETRIC
SOLUTION

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Water	7732-18-5	Not Applicable	Not Applicable
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	Not Applicable	Not Applicable
Sulfuric Acid	7664-93-9	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: Not a dangerous product according to HPR classification criteria.

Component	WHMIS 2015 Hazard Classification
Water	Not a dangerous product according to HPR classification criteria
7732-18-5 (94.08)	
Sulfuric Acid	Corrosive to Metals - Category 1: H290 May be corrosive to metals. (85% (30.8); potentially corrosive to metals; the supplier should be contacted for more information); Acute toxicity - Inhalation - Category 2: H330 Fatal if inhaled. (85% (30.8)); Acute toxicity - Inhalation - Category 3: H331 Toxic if inhaled. (50% (14.2N)); Health Hazard Not Otherwise Classified - Category 1: Causes severe damage to the respiratory tract (2% (0.4N)); Skin corrosion/irritation - Category 1: H314 Causes severe skin burns and eye damage. (50% (14.2N)); Skin corrosion/irritation - Category 1A: H314 Causes severe skin burns and eye damage. (2% (0.4N)); Serious Eye Damage/Eye Irritation - Category 1: H318 Causes serious eye damage. (2% (0.4N))
7664-93-9 (2)	

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

E Corrosive material

Components

Water	WHMIS 1988 Uncontrolled product according to WHMIS classification criteria
Ferrous Ammonium Sulfate, Hexahydrate	Uncontrolled product according to WHMIS classification criteria
Sulfuric Acid	D1A E including >51%

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.

Components	WHMIS Ingredient Disclosure List -
Sulfuric Acid	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Water	7732-18-5	Present	Not Listed
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	Not Listed	Not Listed
Sulfuric Acid	7664-93-9	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Water	7732-18-5	Not listed
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	Not listed
Sulfuric Acid	7664-93-9	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	7732-18-5	Not listed

Product code: F-162

Product name: FERROUS AMMONIUM SULFATE, 0.1 N SOLUTION, USP VOLUMETRIC SOLUTION

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Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	Not listed
Sulfuric Acid	7664-93-9	Not listed

EU Classification

EU GHS - SV - CLP 172/2008

Components	CAS-No.	EU GHS - SV - CLP (172/2008)
Water	7732-18-5	
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9	
Sulfuric Acid	7664-93-9	

EU - CLP (1272/2008)

R-phrase(s)

R36/38 - Irritating to eyes and skin.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

S30 - Never add water to this product.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 1/2 - Keep locked up and out of the reach of children.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Water	7732-18-5		No information	
Ferrous Ammonium Sulfate, Hexahydrate	7783-85-9		No information	
Sulfuric Acid	7664-93-9	C; R35	15%<=C: C; R:35 5%<=C<15%: Xi; R:36/38	S1/2 S26 S30 S45

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

Indication of danger:

Xi - Irritant.

Xi



16. OTHER INFORMATION

Preparation Date: 12/14/2015
Revision Date: 4/19/2017
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

Product code: F-162

Product name: FERROUS
AMMONIUM SULFATE, 0.1 N
SOLUTION, USP VOLUMETRIC
SOLUTION

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End of Safety Data Sheet