



Material Safety Data Sheet

Ferrous Ammonium Sulfate solution, 2% W/V in sulfuric acid

1. Product Identification

Synonyms: CA-6 Analyzer Silica Reagent #3

CAS No.: Not applicable to mixtures.

Molecular Weight: Not applicable to mixtures.

Chemical Formula: Not applicable to mixtures.

Product Codes:

ECD P/N 2010013-1

Manufacture By:

Electro-Chemical Devices, Inc.

1681 Kettering

Irvine, CA 92614

Phone: (800) 729-1333

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
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Sulfuric acid	7664-93-9	1.25%	No
Ferrous ammonium sulfate, Hexahydrate	6153-56-6	2%	No
Water	7732-18-5	to 100%	No

3. Hazards Identification

Emergency Overview

Caution!

May cause eye and skin irritation May cause digestive tract irritation.



Potential Health Effects

Eye:

May cause moderate eye irritation.

Skin:

May cause moderate skin irritation.

Ingestion:

May cause irritation of the digestive tract.

Inhalation:

May cause respiratory tract irritation.

Chronic Exposure:

Prolonged or repeated skin contact may cause dermatitis. Sulfuric acid - repeated exposure to mist may cause chronic tracheobronchitis, erosion and discoloration of teeth. May cause conjunctivitis and lacrimation.

4. First Aid Measures

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids until no evidence of chemical remains. Get medical aid at once. Cover burns with loose sterile nonmedicated bandages.

Skin:

Get medical aid. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and shoes. Cover burns with a dry sterile bandage (secure, not tight).

Ingestion:

Do NOT induce vomiting. Get medical aid at once. Give conscious victim large quantities of water to dilute acid. Give oxygen if respiration is depressed.

Inhalation:

Give artificial respiration if necessary. Get medical aid. Keep victim warm, at rest. Move victim to fresh air.



5. Fire Fighting Measures

General Information:

Negligible fire and explosion hazard when exposed to heat or flame. Move container if possible, cool with fog or spray. Do not scatter contents with excess water.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Auto ignition Temperature:

No information found.

Flash Point:

No information found.

NFPA Rating:

CAS# 7732-18-5: Not published.

CAS# 7783-85-9: Not published.

CAS# 7664-93-9: Not published.

6. Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spills with absorbent (vermiculite, sand, fuller's earth) and place in plastic bags for later disposal.

7. Handling and Storage

Handling: Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use with adequate ventilation.

Storage: Store in labeled non-reactive containers (glass, plastic) protected from heat and incompatibles.



8. Exposure Controls/Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Exposure Limits

Chemical Name:

ACGIH **Water** None of the components are on this list.

Ferrous ammonium sulfate, None of the components are on this list.

Sulfuric acid 1 mg/m³ TWA; 3 mg/m³ STEL

NIOSH **Water** None of the components are on this list.

Ferrous ammonium sulfate, None of the components are on this list.

Sulfuric acid 1 mg/m³ TWA

OSHA **Water** None of the components are on this list.

Ferrous ammonium sulfate, None of the components are on this list.

Sulfuric acid 1 mg/m³ TWA

OSHA Vacated PELs

Sulfuric acid: 1 mg/m³ TWA

Personal Protective Equipment

Eyes:

Do not wear contact lenses when working with chemicals. An eye wash fountain should be available in the immediate work area. Wear splash-proof safety goggles.

Skin:

Wear neoprene, natural Nitrile rubber, or PVC gloves.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Sulfuric acid-- 50 mg/M3 - gas mask with acid gas canister and high efficiency particulate filter. Self contained breathing apparatus with full face piece. 100 mg/M3 - Type C supplied-air respirator with full face piece, helmet or hood operated in continuous-flow mode.

9. Physical and Chemical Properties

Appearance:

Clear, colorless liquid to pale-green.

Odor:

Odorless.

Solubility:

Complete (100%)

Specific Gravity:

No information found.

pH: Acidic



% Volatiles by volume @ 21C (70F):

ca. 99

Boiling Point:

>100°C

Melting Point:

< 0°C

Vapor Density (Air=1):

Not applicable.

Vapor Pressure (mm Hg):

Not applicable.

Evaporation Rate (BuAc=1):

>1

10. Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials.

Incompatibilities with Other Materials

Metals, strong oxidizing agents, alkalis.

Hazardous Decomposition Products

Oxides of nitrogen, oxides of sulfur, ammonia.

Hazardous Polymerization

Has not been reported

11. Toxicological Information

RTECS:

CAS# 7732-18-5: ZC0110000.

CAS# 7783-85-9: BR6500000.

CAS# 7664-93-9: WS5600000.

LD50/LC50:

CAS# 7732-18-5:



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Oral, rat: LD50 = >90 mL/kg.

CAS# 7783-85-9:

Oral, rat: LD50 = 3250 mg/kg.

CAS# 7664-93-9:

Inhalation, mouse: LC50 = 320 mg/m³/2H

Inhalation, rat: LC50 = 510 mg/m³/2H

Oral, rat: LD50 = 2140 mg/kg.

Carcinogenicity:

CAS# 7732-18-5:

Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop65.

CAS# 7783-85-9:

Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 7664-93-9

ACGIH: A2 - Suspected Human Carcinogen (contained in strong inorganic acid mists)

California: Not listed.

NIOSH: Not listed.

NTP: Not listed.

OSHA: Select carcinogen

IARC: Group 1 carcinogen

Epidemiology:

Sulfuric acid is a severe eye, skin, and mucous membrane irritant

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.



13. Disposal Considerations

Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

US DOT

Shipping Name:

Corrosive liquid, acidic, inorganic, n.o.s. (Sulfuric acid)

Hazard Class: 8

UN Number: UN3264

Packing Group: PGII

15. Regulatory Information

US Federal

TSCA:

CAS# 7732-18-5 is listed on the TSCA Inventory.

CAS# 7783-85-9 is not on the TSCA Inventory, however, its anhydrous form is on the inventory and so this hydrate is exempt from TSCA Inventory requirements (40CFR270.3(u)(2)).

CAS# 7664-93-9 is listed on the TSCA Inventory.

SARA Reportable Quantities (RQ):

CAS# 7664-93-9: final RQ = 1000 pounds (454 kg)

CERCLA/SARA Section 313:

This material contains Sulfuric acid (CAS# 7664-93-9, 1.5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

OSHA - Highly Hazardous: None of the components are on this list..



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State Right to Know:

Sulfuric acid can be found on the following state Right-to-Know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California Regulations:

European/International Regulations

Canadian DSL/NDSL:

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 7664-93-9 is listed on Canada's DSL List.

Canada Ingredient Disclosure List:

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7783-85-9 is not listed on Canada's Ingredient Disclosure List.

CAS# 7664-93-9 is listed on Canada's Ingredient Disclosure List

16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **0**

Label Hazard Warning:

As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes and clothing.

Label Precautions:

None.

Label First Aid:

Not applicable.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS-2010013-1 rev. B Sept. 2014
