

World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00135

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: FerroVer® Iron Reagent
Catalog Number: 2105769

Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M00135
Chemical Name: Not applicable
CAS Number: Not applicable
Additional CAS No. (for hydrated forms): Not applicable
Chemical Formula: Not applicable
Chemical Family: Mixture
Intended Use: Laboratory reagent Iron determination

2. HAZARDS IDENTIFICATION

GHS Classification:

Hazard categories: Acute Toxicity: Acute Tox. 4-Orl Serious Eye Damage/Eye Irritation: Eye Dam. 1 Skin Corrosion/Irritation: Skin Irrit. 2 Respiratory or Skin Sensitization: Resp. Sens.1 Specific Target Organ Toxicity - Single Exposure: STOT SE 3 Hazardous to the Aquatic Environment: Aquatic Chronic 3

GHS Label Elements:

DANGER



Hazard statements: Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.

Precautionary statements: Wash thoroughly after handling. Wear protective gloves / protective clothing / eye protection / face protection. Immediately call a POISON CENTER or doctor/physician. Handle environmental release according to local, state, federal, provincial requirements. Wear eye protection. Avoid breathing dust/fume/gas/mist/vapours/spray. Do not eat, drink or smoke when using this product. IF ON SKIN: Wash with plenty of soap and water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove victim/person to fresh air and keep at rest in a position comfortable for breathing.

HMIS:

Health: 3
Flammability: 0
Reactivity: 1
Protective Equipment: X - See protective equipment, Section 8.

NFPA:

Health: 2
Flammability: 0
Reactivity: 1
Symbol: Not applicable

WHMIS Hazard Classification: Class D, Division 2, Subdivision A - Very toxic materials (other toxic effects)
WHMIS Symbols: Other Toxic Effects

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Components according to GHS:

Sodium Thiosulfate

CAS Number: 7772-98-7

Chemical Formula: Na₂S₂O₃ · 5H₂O

GHS Classification: Skin Irrit 2, H315; Eye Irrit 2, H319, STOT SE 3, H335

Percent Range (Trade Secret): 45.0 - 55.0

Percent Range Units: weight / weight

PEL: 15 mg/m³ as total dust; 5 mg/m³ as respirable dust

TLV: 10 mg/m³ as inhalable dust

WHMIS Symbols: Not applicable

Sodium Metabisulfite

CAS Number: 7681-57-4

Chemical Formula: Na₂S₂O₅

GHS Classification: Acute Tox. OrL 4, H302; Acute Tox. Derm 5, H313; Acute Tox. Inh. 4, H332; Skin Irrit. 2, H315; Eye Dam. 1, H318; Resp. Sens. 1, H334; Aquatic Chronic 3, H412

Percent Range (Trade Secret): 20.0 - 30.0

Percent Range Units: weight / weight

PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust

TLV: 5 mg/m³

WHMIS Symbols: Other Toxic Effects

Sodium Hydrosulfite

CAS Number: 7775-14-6

Chemical Formula: Na₂S₂O₄

GHS Classification: Self-Heating 1, H251; Acute Tox. 4 -OrL, H302; Skin Irrit. 3, H316; Eye Irrit. 2A, H319; STOT Single 3, H335; Aquatic Chronic 3, H412

Percent Range (Trade Secret): 15 - 20

Percent Range Units: weight / weight

PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust

TLV: 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust

WHMIS Symbols: Other Toxic Effects Flammable / Combustible

1,10-Phenanthroline-p-toluenesulfonic Acid Salt

CAS Number: 92798-16-8

Chemical Formula: C₁₉H₁₀N₂O₃S

GHS Classification: Acute Tox. 3 - OrL, H301; Skin Irrit. 2, H315; Eye Irrit. 2, H319

Percent Range (Trade Secret): 1-3

Percent Range Units: weight / weight

PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust

TLV: 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust

WHMIS Symbols: Not applicable

Hazardous Components according to GHS: No

Sodium Citrate

CAS Number: 68-04-2

Chemical Formula: C₆H₅O₇Na₃ · 2H₂O

GHS Classification: Not applicable

Percent Range (Trade Secret): 3 - 7

Percent Range Units: weight / weight

PEL: 15 mg/m³ as inhalable dust; 5 mg/m³ as respirable dust

TLV: 10 mg/m³ as inhalable dust; 3 mg/m³ as respirable dust

WHMIS Symbols: Not applicable

4. FIRST AID MEASURES

General Information: In the event of exposure, show this Material Safety Data Sheet and label (where possible) to a doctor.

Advice to doctor: Treat symptomatically.

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Wash skin with soap and plenty of water. Call physician if irritation develops. Remove contaminated clothing.

Inhalation: Give artificial respiration if necessary. Remove to fresh air. Call physician.

Ingestion (First Aid): Give 1-2 glasses of water. Do not induce vomiting. Call physician immediately. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

Extinguishing Media: Carbon dioxide Alcohol foam. Dry chemical.

Extinguishing Media NOT To Be Used: Do NOT use water.

Fire / Explosion Hazards: May react violently with: organic materials aluminum / aluminum compounds strong oxidizers combustible materials strong acids water

Hazardous Combustion Products: Toxic fumes of: sulfur oxides. sodium monoxide carbon monoxide, carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

Containment Technique: Stop spilled material from being released to the environment. Cover spilled solid material with sand or other inert material. Releases of this material may contaminate the environment.

Clean-up Technique: If permitted by regulation, Sweep up material. Dilute with a large excess of water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Decontaminate the area of the spill with a soap solution. Otherwise, Pick up spill for disposal and place in a closed container. Dispose of in accordance with local, state and federal regulations or laws.

Evacuation Procedure: Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

DOT Emergency Response Guide Number: Not applicable

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Store between 10° and 25°C. Protect from: heat moisture light Keep away from: acids / acid fumes. combustible materials organic material oxidizers

Flammability Class: Not applicable

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin Protection: nitrile gloves In the EU, the selected gloves must satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it. lab coat

Inhalation Protection: adequate ventilation and / or dust / mist mask
Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling.
Use with adequate ventilation. Protect from: heat Keep away from: acids/acid fumes organic materials combustible material oxidizers water
TLV: Not established
PEL: Not established
For Occupational Exposure Limits (OEL) for ingredients, see section 3 - Composition/Information on Ingredients.:

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White to light yellow crystals
Physical State: Solid
Molecular Weight: Not applicable
Odor: Sulfur-like
Odor Threshold: Not determined
pH: 5% solution = 5.29
Metal Corrosivity:
Corrosivity Classification: Not classified as corrosive to metals according to GHS criteria.
Steel: 0.106 in/yr
Aluminum: 0.003 in/yr
Specific Gravity/ Relative Density (water = 1; air =1): 2.27
Viscosity: Not applicable
Solubility:
Water: Soluble
Acid: Soluble
Other: Not determined
Partition Coefficient (n-octanol / water): Not determined
Coefficient of Water / Oil: Not determined
Melting Point: Decomposes at 192 °C (378 °F)
Decomposition Temperature: 192 °C (378 °F)
Boiling Point: Not applicable
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not determined
Flammable Properties: Can burn in fire, releasing toxic vapors. Material is not classified as flammable according to GHS criteria.
Flash Point: Not applicable
Method: Not applicable
Flammability Limits:
Lower Explosion Limits: Not applicable
Upper Explosion Limits: Not applicable
Autoignition Temperature: Not determined
Explosive Properties:
Not classified according to GHS criteria.
Oxidizing Properties:
Not classified according to GHS criteria.
Reactivity Properties:
Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.
Gas under Pressure:
Not classified according to GHS criteria.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Mechanical Impact: None reported
Static Discharge: None reported.
Reactivity / Incompatibility: Incompatible with: combustible materials organic materials oxidizers aluminum acids sodium nitrite sodium chlorite

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides carbon monoxide carbon dioxide

Conditions to Avoid: Exposure to light. Excess moisture Extreme temperatures

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, Metabolism and Distribution: No information available for mixture.

Toxicologically Synergistic Products: None reported

Acute Toxicity: Acute Toxicity Estimate (ATE) - Calculated from Ingredient Toxicity Data Route Data Given Below

Oral Rat LD50 = 1370 mg/kg

Dermal Guinea pig LD50 = 3820 mg/kg

Inhalation Rat LC50 = 16 mg/L/4 hr

Specific Target Organ Toxicity - Single Exposure (STOT-SE): Target Organs Respiratory Tract

Specific Target Organ Toxicity - Repeat Exposure (STOT-RE): Based on classification principles, the classification criteria are not met.

Skin Corrosion/Irritation: Irritating to skin.

Eye Damage: Corrosive to eyes.

Sensitization: Respiratory Sensitizer Contains a sensitizing compound.

Sodium Metabisulfite

CMR Effects/Properties (carcinogenic, mutagenic or toxic to reproduction): Based on classification principles, the classification criteria are not met.

An ingredient of this mixture is: IARC Group 3: Non-classifiable

Metabisulfites

This product does NOT contain any NTP listed chemicals.

This product does NOT contain any OSHA listed carcinogens.

Symptoms/Effects:

Ingestion: Harmful May cause: allergic respiratory reaction gastrointestinal tract irritation circulatory disturbances central nervous system depression Very large doses may cause: abdominal pain diarrhea vomiting depression

Inhalation: Causes: respiratory tract irritation May cause: allergic respiratory reaction difficult breathing coughing rapid pulse and respirations blood pressure changes chest pain sweating flushing hives

Skin Absorption: May be harmful if absorbed through skin. May cause Effects similar to those of ingestion

Chronic Effects: Chronic overexposure may cause allergic respiratory reactions

Medical Conditions Aggravated: Sulfites are strong sensitizers. Inhalation and ingestion may cause allergic respiratory reactions in asthmatics. Persons with respiratory conditions should take special care when working with products that contain sulfites.

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product. Do not place in landfill. Recycle appropriately. Do not release into the environment.

Method Used for Estimation of Aquatic Toxicity of Mixture Summation Method M-factor (Multiplier) for highly toxic ingredients: 1

Ingredient Ecological Information: Sodium Metabisulfite: 96 hr *Salmo gairdneri* LC50 = 15-220 mg/L; 24 hr *Daphnia magna* EC50 = 89 mg/L; 96 hr *Scenedesmus subspicatus* EC50 = 40 mg/L; 96 hr *Lepomis macrochirus* LC50 = 32 mg/L; 96 hr Fish LC50 > 12.5 mg/L; 96 hr *Oncorhynchus mykiss* = 150 mg/L.

CEPA categorization for ingredients are as follows:

Sodium Metabisulfite: Persistent, not bioaccumulative or inherently toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

EPA Waste ID Number: Not applicable

Special Instructions (Disposal): Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. If permitted by regulation, Open cold water tap completely, slowly pour the reacted material to the drain. Allow cold water to run for 5 minutes to completely flush the system. Otherwise, Check with national, local municipal and state authorities and waste contractors for pertinent local information on the disposal of this article.

Empty Containers: Rinse three times with an appropriate solvent. Collect rinsate and dispose of according to local, state or federal regulations. Dispose of empty container as normal trash. In the US, rinsate from empty containers is classified as hazardous waste and should be disposed of at an E.P. A. approved facility. Rinsate from empty containers may contain sufficient product to require disposal as hazardous waste.

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

D.O.T.:

D.O.T. Proper Shipping Name: Not Currently Regulated

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Hazard Class: NA

Subsidiary Risk: NA

ID Number: NA

Packing Group: NA

T.D.G.:

Proper Shipping Name: Not Currently Regulated

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Hazard Class: NA

Subsidiary Risk: NA

UN Number/PIN: NA

Packing Group: NA

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Not Currently Regulated

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Hazard Class: NA

Subsidiary Risk: NA

ID Number: NA

Packing Group: NA

I.M.O.:

Proper Shipping Name: Not Currently Regulated

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Hazard Class: NA

Subsidiary Risk: NA

ID Number: NA

Packing Group: NA

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

U.S. Federal Regulations:

O.S.H.A.: This product meets the criteria for a hazardous substance as defined in the Hazard Communication Standard [29 CFR 1910.1200(d)(5)(iv)].

E.P.A.:

S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

S.A.R.A. Title III Section 313 (40 CFR 372): This product does NOT contain any chemical subject to the reporting requirements of Section 313 of Title III of SARA.

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302 (EHS) TPQ (40 CFR 355): Not applicable

304 CERCLA RQ (40 CFR 302.4): Not applicable

304 EHS RQ (40 CFR 355): Not applicable

Clean Water Act (40 CFR 116.4): Not applicable

RCRA: Contains no RCRA regulated substances.

State Regulations:

California Prop. 65: No Prop. 65 listed chemicals are present in this product.

Identification of Prop. 65 Ingredient(s): Not applicable

California Perchlorate Rule CCR Title 22 Chap 33: Not applicable

Trade Secret Registry: Not applicable