SAFETY DATA SHEET

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

Product Name: FerroVer® Iron Reagent
Catalog Number: 2105769

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880

Emergency Telephone Numbers:
(Poison Information Center Main)
(+49 (0) 6131 19240) 24 HR

SDS Number: M00135
Chemical Name: Not applicable
Chemical Formula: Not applicable
Chemical Family: Not applicable
Use of the substance/preparation: Iron determination
CAS No.: Not applicable
Hazard: May cause allergic reaction. May cause irritation.
Date of MSDS Preparation:
Day: 12
Month: 01
Year: 2006

Additional Emergency Response Numbers:
Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33-(0)1-40370404, Italy: +39-02-66101029, Netherlands: +31-(0)30-2748888, Switzerland: +41-(0)1-2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

Sodium Thiosulfate
EEC Number: 2318675
CAS No.: 10102-17-7
Percent Range: 45,0 - 55,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

1,10-Phenanthroline-p-toluenesulfonic Acid Salt
EEC Number: None assigned
CAS No.: 92798-16-8
Percent Range: 1,0 - 5,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Not applicable
Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

Sodium Hydrosulfite
EEC Number: 231800
CAS No.: 7778-46
Percent Range: 15,0 - 25,0
Percent Range Units: weight / weight
**Ingredient EEC Symbol:** Xn - HARMFUL  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 7 R 22 R 31  
**TLV:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 3 mg/m³, Inhalable dust

**Sodium Citrate**  
**EEC Number:** 2006753  
**CAS No.:** 68-04-2  
**Percent Range:** 1,0 - 10,0  
**Percent Range Units:** weight / weight  
**Ingredient EEC Symbol:** Not applicable  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** Not applicable  
**TLV:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 3 mg/m³, Inhalable dust

**Sodium Metabisulfite**  
**EEC Number:** 2316730  
**CAS No.:** 7681-57-4  
**Percent Range:** 20,0 - 30,0  
**Percent Range Units:** weight / weight  
**Ingredient EEC Symbol:** Xn - HARMFUL  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 22  
**TLV:** 5 mg/m³ (ACGIH - TWA)  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 3 mg/m³, Inhalable dust

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3. HAZARDS IDENTIFICATION

**Emergency Overview:**  
**Appearance:** White to light yellow crystals  
**Odor:** Sulfur-like  
**EU Symbols:** Xn - HARMFUL  
**R PHRASES:** R 22: Harmful if swallowed. R 31: Contact with acids liberates toxic gas. R 36/37/38: Irritating to eyes, respiratory system and skin.

**Protective Equipment:**

**Potential Health Effects:**  
**Eye Contact (EC):** Causes irritation  
**Skin Contact (EC):** Causes irritation  
**Skin Absorption (EC):** None Reported  
**Target Organs (SAE):** None Reported  
**Ingestion (EC):** May cause: allergic respiratory reaction gastrointestinal tract irritation circulatory disturbances central nervous system depression Very large doses may cause: abdominal pain diarrhea vomiting depression  
**Target Organs (Ing E):** None Reported  
**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  
**Target Organs (Inh E):** None Reported  
**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.  
**Chronic Effects:** Chronic overexposure may cause allergic respiratory reactions  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 3: Non-classifiable Metabisulfites  
**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen.  
**Toxicologically Synergistic Products:** None reported

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4. FIRST AID MEASURES
Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Skin Contact (First Aid): Wash skin with soap and plenty of water.
Ingestion (First Aid): Give 1-2 glasses of water. Do not induce vomiting. Call physician immediately.
Inhalation: Give artificial respiration if necessary. Remove to fresh air. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors.
Hazardous Combustion Products: Toxic fumes of sulfur oxides, sodium monoxide, carbon monoxide, carbon dioxide.
Fire / Explosion Hazards: May react violently with organic materials, aluminum/aluminum compounds, strong oxidizers, combustible materials, strong acids, water.
Static Discharge: None reported.
Mechanical Impact: None reported.
Extinguishing Media: Carbon dioxide, Alcohol foam, Dry chemical.
Extinguishing Media NOT To Be Used: None applicable.
Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice: Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
Containment Technique: Stop spilled material from being released to the environment. Cover spilled solid material with sand or other inert material.
Clean-up Technique: 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.
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.

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.
Special Packaging Instructions: Not applicable.
Use of the substance/preparation: Iron determination.

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. 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 / Hand Protection: disposable latex gloves, lab coat
Inhalation Protection: adequate ventilation and / or dust / mist mask
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust.

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White to light yellow crystals
Physical State: Solid
Odor: Sulfur-like
**10. STABILITY / REACTIVITY**

*Chemical Stability:* Stable when stored under proper conditions.

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


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

*Hazardous Polymerization:* Will not occur.

**11. TOXICOLOGICAL INFORMATION**

*Product Toxicological Data:*
  - **LD50:** None reported
  - **LC50:** None reported

*Dermal Toxicity Data:* None reported

*Skin and Eye Irritation Data:* Erythema at 3 minutes, 1 hour, 4 hours, 24 hours, 48 hours, 72 hours = 0. Edema at 3 minutes, 1 hour, 4 hours, 24 hours, 48 hours, 72 hours = 0.

*Mutation Data:* None reported

*Reproductive Effects Data:* None reported

**Ingredient Toxicological Data:**
- Sodium Hydrosulfite Oral rat LD50 > 500 mg/kg; Sodium Thiosulfate Oral rat LD50 > 8 g/kg; Sodium Citrate Oral rat LD50 > 8 g/kg

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

**12. ECOLOGICAL INFORMATION**

*Product Ecological Information:* --

No ecological data available for this product.

*Ingredient Ecological Information:* Sodium Metabisulfite: 120 ppm / 24, 48 & 96 hours / mosquito fish / TLm / fresh water (converting bisulfite figure to metabisulfite); Sodium Thiosulfate: Aquatic toxicity: 24,000 mg / 1 / 96 hours / mosquito-fish / TLm/ turbid water at 22 ° - 24° C.

**13. DISPOSAL CONSIDERATIONS**
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

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

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ICAO Hazard Class: NA
ICAO Subsidiary Risk: NA
ICAO UN/ID Number: NA
ICAO Packing Group: NA

I.M.O.:
I.M.O. Proper Shipping Name: Not Currently Regulated

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I.M.O. Hazard Class: NA
I.M.O. Subsidiary Risk: NA
I.M.O. UN Number: NA
I.M.O. Packing Group: NA

A.D.R.:
A.D.R. Proper Shipping Name: Not Currently Regulated

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A.D.R. Hazard Class: NA
A.D.R. Subsidiary Risk: NA
A.D.R. UN Number: NA
A.D.R. Packing Group: NA

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit   Hazard Class: 9   UN Number: 3316

15. REGULATORY INFORMATION

National Inventories:
EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS or are placed on the market in quantities less than 10 kg per year.
EEC Number: Not applicable

EEC LABEL COPY:
EU Symbols: Xn - HARMFUL


16. OTHER INFORMATION


Use of the substance/preparation: Iron determination

Revision Summary: Updates in Section(s) 14,
Legend:

- NA - Not Applicable  w/w - weight/weight
- ND - Not Determined  w/v - weight/volume
- NV - Not Available  v/v - volume/volume

**USER RESPONSIBILITY**: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

**THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.**

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