

World Headquarters
Hach Company
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MSDS No: M00135

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: +39-0266101029, 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: 231900

CAS No.: 7775146

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.: 68042
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.: 7684574
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

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 (SA E): 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

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: Not applicable Not applicable Not 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.

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

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

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

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

pH: 5% solution = 5,29
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Not applicable
Melting Point: decomposes at 192° C
Flash Point: Not applicable
Method: Not applicable
Autoignition Temperature: Not determined
Flammability Limits:
 Lower Explosion Limits: Not applicable
 Upper Explosion Limits: Not applicable
Specific Gravity (water = 1): 2,27
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not determined
Partition Coefficient (n-octanol / water): Not determined
Solubility:
 Water: Soluble
 Acid: Soluble
 Other: Not determined
Metal Corrosivity:
 Steel: 0,106 in/yr
 Aluminum: 0,003 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Exposure to light. Excess moisture. Extreme temperatures
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
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

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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 / l / 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

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.

S PHRASES: S 22: Do not breathe dust. S 25: Avoid contact with eyes. S 39: Wear eye / face protection.

16. OTHER INFORMATION

References: CCINFO MSDS/FTSS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. NIOSH Registry of Toxic Effects of Chemical Substances, 1985-86. Cincinnati: U.S. Department of Health and Human Services, April, 1987. Outside Testing. Vendor Information. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. Technical Judgment. In-house information. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983.

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.

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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