

**Revision Date:** 2013-11-18  
**Reason for Revision:** Regulation (EC) No. 1272/2008 Compliance

**SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY**

**Product Name:** HI 93721-0 Iron High Range Reagent

**Additional Product Codes:** HI 93721-01  
HI 93721-03

**Application:** Determination of Iron in Water Samples

**Company Information (USA):**

Hanna Instruments, Inc.  
584 Park East Dr, Woonsocket, Rhode Island, USA 02895

**Technical Service Contact Information:**

1-800-426-6287 (8:30AM - 5:00PM ET)  
+1-401-766-4260 (8:30AM - 5:00PM ET)

**USA Emergency Contact Information:**

1-800-424-9300 (Chemtrec 24Hr. Emergency)

**International Emergency Contact Information:**

+1-703-527-3887 (Chemtrec 24Hr. Emergency)

**E-mail Address:**

tech@hannainst.com

**SECTION 2: HAZARD IDENTIFICATION**

Self-heating; may catch fire. Harmful if swallowed. Causes serious eye damage. Harmful to aquatic life with long lasting effects. Contact with acids liberates toxic gas.

**According to Regulation (EC) No. 1272/2008:**

**Classification:** Self Heating (Category 1)  
Acute Toxicity, Oral (Category 4)  
Eye Damage (Category 1)  
Chronic Aquatic Toxicity (Category 3)

**Signal Word:** **Danger**

**Pictograms:**



**Hazard Statements:** H251: Self-heating; may catch fire.  
H302: Harmful if swallowed.  
H318: Causes serious eye damage.  
H412: Harmful to aquatic life with long lasting effects.  
EUH031: Contact with acids liberates toxic gas.

**Precaution Statements:** P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P235+P410: Keep cool. Protect from sunlight.  
P301+P310: IF SWALLOWED: Immediately call a poison center or doctor/physician.

**According to Directives 67/548/EEC and 1999/45/EC:**

**Symbol:** Xn: Harmful  
Xi: Irritant

**R-phrases:** 7-22-31-41-52/53: May cause fire. Harmful if swallowed. Contact with acids liberates toxic gas. Risk of serious damage to eyes. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-phrases:** 26-36/39-46-60-61: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and eye/face protection. If swallowed, seek medical advice immediately and show this container or label. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

**SECTION 3: COMPOSITION AND COMPONENT INFORMATION**

<b>Component:</b>	<b>EC No:</b>	<b>CAS No:</b>	<b>Hazard Class:</b>	<b>Phrases:</b>	<b>Concentration:</b>
Sodium metabisulfite	231-673-0	7681-57-4	Acute Tox. 4 Eye Dam. 1 Xn, Xi	H302, H318, EUH031 R: 22-31-41	> 20% - < 25%
Sodium hydrosulfite	231-890-0	7775-14-6	Self-heat. 1 Acute Tox. 4 Xn	H251, H302, EUH031 R: 7-22-31	> 10% - < 20%
1,10-phenanthroline monohydrate	200-629-2	5144-89-8	Acute Tox. 3 Aquatic Acute 1 Aquatic Chronic 1 T, N	H301, H410 R: 25-50/53	> 0.25% - < 2.5%

**SECTION 4: FIRST AID MEASURES**

- After Inhalation:** Remove to fresh air. Consult a doctor if feeling unwell.
- After Skin Contact:** Wash affected area with plenty of water. Remove contaminated clothing.
- After Eye Contact:** Rinse out with plenty of water. If pain persists, summon medical advice
- After Swallowing:** Drink plenty of water, induce vomiting, obtain medical attention.
- General Information:** Remove contaminated, soaked clothing immediately and dispose of safely.

**SECTION 5: FIRE-FIGHTING MEASURES**

- Suitable Extinguishing Media:**  
Foam, Powder, Dry Sand
- Special Risks:**  
Development of hazardous combustion gases or vapors possible in the event of fire. The following may develop in event of fire: Sulfur Oxides
- Special Protective Equipment:**  
Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.
- Additional Information:**  
Contain escaping vapors with water. Prevent fire-fighting water from entering surface water or groundwater.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

- Personal Precautions:**  
Avoid generation of dusts. Do not inhale dusts.
- Environmental Precautions:**  
Do not discharge into the drains/surface waters/groundwater.
- Additional Notes:**  
Take up dry. Clean up affected area and dispose according to local regulation.

**SECTION 7: HANDLING AND STORAGE**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li><b>Handling:</b><br/>Avoid generation of dusts. Do not inhale substance.<br/>Accessible only for authorized persons.</li> </ul> | <ul style="list-style-type: none"> <li><b>Storage:</b><br/>Store at room temperature (+15 to +25 °C). Tightly closed in a dry and well-ventilated place. Keep away from sources of ignition and heat.</li> </ul> |
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**SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION**

Type	Value	Source	Type	Value	Source
<b>Sodium Metabisulfite</b>					
TWA (8hr)	5 mg/m <sup>3</sup>	Belgium	TWA (8hr)	5 mg/m <sup>3</sup>	Canada (Ontario)
TWA (8hr)	5 mg/m <sup>3</sup>	Canada (Quebec)	TWA (8hr)	5 mg/m <sup>3</sup>	France
TWA (8hr)	5 mg/m <sup>3</sup>	Greece	TWA (8hr)	5 mg/m <sup>3</sup>	Portugal
TWA (8hr)	5 mg/m <sup>3</sup>	Spain	TWA (8hr)	5 mg/m <sup>3</sup>	UK

**Engineering:**

Maintain general industrial hygiene practice.

**Personal Protective Equipment:**

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

**Respiratory Protection:**

Required when dusts are generated. Work under hood.

**Protective Gloves:**

Rubber or plastic

**Eye Protection:**

Goggles or face mask

**Industrial Hygiene:**

Change contaminated clothing. Wash hands after working with substance.

**SECTION 9: PHYSICAL/CHEMICAL PROPERTIES**

<b>Appearance:</b>	White powder	<b>Odor:</b>	Slightly pungent	<b>Density at 20°C:</b>	ND
<b>Melting Point:</b>	NA (decomposition)	<b>Boiling Point:</b>	NA	<b>Solubility:</b>	Soluble
<b>pH at 20°C:</b>	6.2 at 3 g/L in water	<b>Explosion Limit:</b>	NA	<b>Flash Point:</b>	NA
<b>Thermal Decomp.:</b>	NA				

**SECTION 10: STABILITY AND REACTIVITY**

**Conditions to be Avoided:**

Heating (risk of decomposition).

**Hazardous Polymerization:**

Will not occur.

**Further Information:**

Not available

**Hazardous Decomposition Products:**

In the event of fire: See section 5.

**Substances to be Avoided:**

Acids, oxidizing agents, salts of oxyhalogenic acids

**SECTION 11: TOXICOLOGICAL INFORMATION****Product Toxicity**

Quantitative data on the toxicity of this product is not available.

**Potential Health Effects:**

- Inhalation:** Irritations. Other possible symptoms are: coughing, dyspnoea.  
**Skin Contact:** Irritations.  
**Eye Contact:** Irritations.  
**Ingestion:** Nausea, pain, muscular weakness, diarrhea, bloody vomiting, disturbed electrolyte balance, burns in esophagus and stomach, collapse, respiratory paralysis.  
**Further Data:** Further hazardous properties cannot be excluded. The product should be handled with the usual care when dealing with chemicals.

**Component Toxicity****Acute Toxicity:****Chronic Toxicity:**

Not Available

**1,10-phenanthroline Monohydrate**

**LD50:** Oral - Rat - 132 mg/kg

**Additional Data:****APPLICABLE TO MAIN COMPONENT:**

The following applies to Sodium hydrosulfite, as the pure substance:

Acute toxicity

LD50 (oral, rat): ~2500 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Irritations (OECD 405).

Skin irritation test (rabbit): No irritation (OECD 404).

Subacute to chronic toxicity

Sensitization:

Experience in man: No skin-sensitizing effect.

Bacterial mutagenicity: Ames test: negative.

**APPLICABLE TO MAIN COMPONENT:**

The following applies to Sodium metabisulfite, as the pure substance:

Acute toxicity

LD50 (oral, rat): 1540 mg/kg.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Irritations.

Skin irritation test (rabbit): No irritation.

Subacute to chronic toxicity

Noncarcinogenic in animal experiments.

Mutagenicity (mammal cell test): micronucleus negative.

Bacterial mutagenicity: Ames test: negative.

No impairment of reproductive performance in animal experiments.

No teratogenic effect in animal experiments.

Further toxicological information

After inhalation: Irritations of the mucous membranes, coughing, and dyspnoea.

After skin contact: Slight irritations.

After eye contact: Risk of serious damage to eyes.

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

**SECTION 12: ECOLOGICAL INFORMATION**

Quantitative data on the toxicity of this product is not available.

**APPLICABLE TO MAIN COMPONENT:**  
 The following applies to Sodium hydrosulfite, as the pure substance:  
 Biologic degradation:  
 Methods for the determination of biodegradability are not applicable to inorganic substances.  
 Behavior in environmental compartments:  
 log p(o/w): <-4.7 (calculated).  
 No bioaccumulation is to be expected (log P(o/w) <1).  
 Ecotoxic effects:  
 Biological effects:  
 Reacts with water to form toxic decomposition products.  
 Fish toxicity: L.idus LC50: 46-68 mg/L /96 h.  
 Daphnia toxicity: Daphnia magna EC50: 98 mg/L /48 h.  
 Algeal toxicity: Desmodesmus subspicatus IC50: 120 mg/L /72 h.  
 Bacterial toxicity: Ps.putida EC50: 107 mg/L /17 h.  
 Further ecologic data:  
 COD: 0.21 g/g.

**APPLICABLE TO MAIN COMPONENT:**  
 The following applies to Sodium metabisulfite, as the pure substance:  
 Biologic degradation:  
 Methods for the determination of biodegradability are not applicable to inorganic substances.  
 Ecotoxic effects:  
 Biological effects:  
 Harmful effect on aquatic organisms.  
 When introduced properly, no impairments in the function of adapted biological waste-water-treatment plants are to be expected.  
 Fish toxicity: Onchorhynchus mykiss LC50: 150-220 mg/L /96 h.  
 Daphnia toxicity: Daphnia magna EC50: 89 mg/L /48 h.  
 Algeal toxicity: Desmodesmus subspicatus IC50: 48 mg/L /72 h. Bacterial toxicity: Ps.putida EC50: 56 mg/L /17 h.  
 Further ecologic data:  
 COD: 0.168 g/g (calculated).  
 TOD: 0.154 g/g.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**Waste Disposal:** Chemical residues are generally classified as special waste and thus covered by local regulations. Contact local authorities or disposal companies for advice. Handle contaminated packaging in the same way as the substance itself.

**SECTION 14: TRANSPORTATION INFORMATION**

	<b>Land (ADR/RID):</b>	<b>Sea (IMDG):</b>	<b>Air (ICAO/IATA):</b>
<b>UN No.:</b>	3190	3190	3190
<b>Proper Shipping Name:</b>	Self-heating solid, inorganic, n.o.s. (sodium hydrosulfite mixture)	Self-heating solid, inorganic, n.o.s. (sodium hydrosulfite mixture)	Self-heating solid, inorganic, n.o.s. (sodium hydrosulfite mixture)
<b>Class (Sub Risk):</b>	4.2	4.2	4.2
<b>Packing Group:</b>	III	III	III

**SECTION 15: REGULATORY INFORMATION**

Complies with European Regulations (EC) No. 1907/2006 and No. 1272/2008.  
 Complies with European Council Directives 67/548/EEC and 1999/45/EC.  
 Complies with OSHA Regulation 29 CFR 1910.1200.  
 Complies with Canadian Regulation SOR/88-66

**SECTION 16: OTHER INFORMATION*****Text of phrases under Section 3***

R7: May cause fire.  
R22: Harmful if swallowed.  
R25: Toxic if swallowed.  
R31: Contact with acids liberates toxic gas.  
R41: Risk of serious damage to eyes.  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
H251: Self-heating; may catch fire.  
H301: Toxic if swallowed.  
H302: Harmful if swallowed.  
H318: Causes serious eye damage.  
H410: Very toxic to aquatic life with long lasting effects.  
EUH031: Contact with acids liberates toxic gas.

***Revision Information***

**Revision Date:** 2013-11-18  
**Supersedes edition of:** 2012-11-09  
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***Legend***

NA: Not Applicable  
ND: Not Determined

**THE INFORMATION CONTAINED HEREIN IS BASED ON THE PRESENT STATE OF OUR KNOWLEDGE. IT CHARACTERIZES THE PRODUCT WITH REGARD TO THE APPROPRIATE SAFETY PRECAUTIONS. IT DOES NOT REPRESENT A GUARANTEE OF THE PROPERTIES OF THE PRODUCT.**