

Safety Data SheetAccording to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66**Revision Date:** 2009-06-10**Reason for Revision:** 29 CFR 1910.1200 and SOR/88-66 Compliance**SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY****Product Name:** HI 93751-0 Sulfate Reagent**Additional Product Codes:** HI 93751-01**Application:** Determination of Sulfate in Water Samples

HI 93751-03

Company Information (USA):Hanna Instruments, Inc.
584 Park East Dr, Woonsocket, Rhode Island, USA 02895**Technical Service Contact Information:**

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+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)

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SECTION 2: HAZARD IDENTIFICATION

Harmful by inhalation. Toxic if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION**Component:** Barium Chloride Dihydrate Citric Acid Anhydrous**EC-No.:** 233-788-1 201-069-1**CAS-No.:** 10326-27-9 77-92-9**Hazard:** T, Xn Xi**Phrases:** R: 20-25 R: 37/38-41**Content:** > 45% - < 65% > 40% - < 60%**SECTION 4: FIRST AID MEASURES****After Inhalation:** Remove to fresh air. Give artificial respiration if victim is not breathing. Give oxygen if breathing is difficult.**After Skin Contact:** Flush affected area with copious amounts of water for at least 15 minutes.**After Eye Contact:** Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.**After Swallowing:** Wash out mouth with water provided person is conscious. Call a physician immediately.**General Information:** Remove contaminated, soaked clothing immediately and dispose of safely.**SECTION 5: FIRE-FIGHTING MEASURES****Suitable Extinguishing Media:**

Water Spray, Carbon Dioxide, Dry Chemical Powder, Appropriate Foam

Special Risks:Non-combustible. Development of hazardous combustion gases or vapors possible in the event of fire. The following may develop in event of fire:
Hydrogen Chloride Gas**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 ground water.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Avoid substance contact. Avoid generation of dusts; do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

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

Handling:

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage:

Store tightly closed. Accessible only for authorized persons.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	Value	Source	Type	Value	Source
Barium Chloride Dihydrate					
TWA (8hr)	0.5 mg (Ba)/m ³	Belgium	TWA (8hr)	0.5 mg (Ba)/m ³	Canada (Ontario)
TWA (8hr)	0.5 mg (Ba)/m ³	Canada (Quebec)	TWA (8hr)	0.5 mg (Ba)/m ³	France
TWA (8hr)	0.5 mg (Ba)/m ³	Germany	TWA (8hr)	0.5 mg (Ba)/m ³	Greece
TWA (8hr)	0.5 mg (Ba)/m ³	Hungary	TWA (8hr)	0.5 mg (Ba)/m ³	Italy
TWA (8hr)	0.5 mg (Ba)/m ³	Netherlands	TWA (8hr)	0.5 mg (Ba)/m ³	Portugal
TWA (8hr)	0.5 mg (Ba)/m ³	Romania	TWA (8hr)	0.5 mg (Ba)/m ³	Spain
TWA (8hr)	0.5 mg (Ba)/m ³	UK	TWA (8hr)	0.5 mg (Ba)/m ³	USA (ACGIH)
TWA (8hr)	0.5 mg (Ba)/m ³	USA (OSHA)			

Engineering:

Safety shower and eye wash.

Personal Protective Equipment:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be determined with the respective supplier.

Respiratory Protection:

Required when dusts are generated.

Protective Gloves:

Compatible chemical-resistant gloves

Eye Protection:

Goggles or face mask

Industrial Hygiene:

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace. Work under hood. Do not inhale substance.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	White powder	Odor:	Odorless	Density at 20° C:	ND
Melting Point:	ND	Boiling Point:	NA	Solubility:	Soluble
pH at 20° C:	2.3 at 10 g/L in water	Explosion Limit:	NA	Flash Point:	NA
Thermal Decomp.:	NA				

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SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Polymerization:

Will not occur.

Further Information:

Not available

Hazardous Decomposition Products:

Toxic gases: See section 5.

Substances to be Avoided:

Strong oxidizing agents

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

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

Potential Health Effects:

Inhalation: Irritations of the mucous membranes, coughing, and dyspnoea..

Skin Contact: Irritations.

Eye Contact: Severe irritations.

Ingestion: May be harmful if swallowed. The following applies to soluble barium compounds in general: after swallowing: mucosal irritation, nausea, salivation, vomiting, dizziness, pain, colics, and diarrhoea. Systemic effects include: cardiac dysrhythmias, bradycardia (subdued cardiac activity), rise in blood pressure, shock and circulatory collapse as well as muscular rigidity.

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:

Not Available

Chronic Toxicity:

Not Available

Additional Data:

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Barium Chloride – as the pure substance:

Acute toxicity

LD50, oral, rat: 118 mg/Kg – calculated on the pure anhydrous substance. Subacute to chronic toxicity

Mutagenicity (mammal cell test): negative. (in vitro)

Bacterial mutagenicity: Ames test: negative.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Citric acid anhydrous – as the pure substance:

Acute toxicity

LD50, oral, rat: 3000 mg/Kg – calculated on the pure substance.

Specific symptoms in animal studies:

Eye irritation test (rabbit): Severe irritations.

Skin irritation test (rabbit): Slight irritations.

Subacute to chronic toxicity

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

No impairment of reproductive performance in animal experiments.

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SECTION 12: ECOLOGICAL INFORMATION

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

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Citric acid anhydrous – as the pure substance:

Ecotoxicological effects

Biological effects: Harmful effect due to pH shift.

Fish toxicity: *L.idus* LC50: 440-760 mg/L /96 h;

Daphnia toxicity: *Daphnia magna* EC50: ~120 mg/L /72 h.

Maximum permissible toxic concentration:

Protozoa: *E.sulcatum* EC5: 485 mg/L /72 h;

Bacterial toxicity: *Ps.putida* EC5: >10000 mg/L /16 h; *M.aeruginosa* EC5: 80 mg/L /8 d;

Algal toxicity: *Sc.quadricauda* IC5: 640 mg/L /7 d;

Behavior in environmental compartments:

Distribution: log p(o/w): -1.72 (20 °C); No bioaccumulation is to be expected (log P(o/w) <1).

Biologic degradation:

Biodegradation: 98 % /2 d (modified Zahn-Wellens-test); easily eliminable.

Further ecologic data:

Degradability:

BOD5: 0.526 g/g;

TOD: 0.75 g/g;

COD: 0.728 g/g.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Barium chloride – as the pure substance:

Ecotoxicological effects

Biological effects:

Endangers drinking-water supplies if allowed to enter soil or water. Formation of health-hazardous mixtures possible with water.

Fish toxicity: *L.idus* LC50: 870 mg/L /48 h (anhydrous substance).

Daphnia toxicity: *Daphnia magna* EC50: 21.9 mg/L /48 h (anhydrous substance).

Biologic degradation:

Methods for the determination of biodegradability are not applicable to inorganic substances.

Further Data: Do not allow to enter waters, waste waters, or soil!

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

Land:

ADR/RID: 9, PGII

UN-No.: UN3316

Name : CHEMICAL KIT

Sea:

IMDG: 9/UN3316/PG II

Name : CHEMICAL KIT

Marine pollutant: no

Severe marine pollutant: no

Air:

ICAO/IATA: 9/UN3316/PG II

Name: CHEMICAL KIT

Transport data applies to the COMPLETE KIT!

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: T: Toxic

R-phrases: 20-25-37/38-41: Harmful by inhalation. Toxic if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes.

S-phrases: 26-36/39-45: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Contains: Barium chloride dihydrate

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20: Harmful by inhalation.
25: Toxic if swallowed.
37/38: Irritating to respiratory system and skin.
41: Risk of serious damage to eyes.

Revision Information

Revision Date: 2009-06-10
Supersedes edition of: 2008-12-01
Reason for revision: 29 CFR 1910.1200 and SOR/88-66
Compliance

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.