

Revision Date: 2013-01-25
Reason for Revision: Regulation (EC) No. 1272/2008 Compliance

SECTION 1: IDENTIFICATION OF THE PRODUCT AND COMPANY

Product Name: HI 93748C-0 Manganese Low Range Reagent C

Application: Determination of Manganese 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

Flammable liquid and vapour. Causes serious eye damage.

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

Classification: Flammable Liquid (Category 3)
 Eye Damage (Category 1)

Signal Word: **Danger**

Pictograms:



Hazard Statements: H226: Flammable liquid and vapour.
 H318: Causes serious eye damage.

Precaution Statements: P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.

Statements: P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

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

Symbol: Xi: Irritant

R-phrases: R10: Flammable
 R41: Risk of serious damage to eyes.

S-phrases: 26-36: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component:	EC No:	CAS No:	Hazard Class:	Phrases:	Concentration:
Ethyl alcohol	200-578-6	64-17-5	Flam. Liq. 2 F	H225 R: 11	> 10% - < 30%
Polyethylene glycol tert-octylphenyl ether	NA	9036-19-5	Eye Dam. 1 Xi	H318 R: 41	> 5% - < 15%
Ammonia	215-947-6	1336-21-6	Skin Corr. 1B Aquatic Acute 1 C, N	H314, H400 R: 34-50	< 5%
Ammonium chloride	235-186-4	12125-02-9	Acute Tox. 4 Skin Irrit. 2 Xn, Xi	H302, H319 R: 22-36	< 5%

Safety Data SheetAccording to Regulation (EC) No. 1907/2006
OSHA Regulation 29 CFR 1910.1200
Canadian Regulation SOR/88-66**SECTION 4: FIRST AID MEASURES**

- After Inhalation:** Remove to fresh air.
- 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:** If victim is still conscious, make him drink plenty of water. Call in physician.
- General Information:** Not available

SECTION 5: FIRE-FIGHTING MEASURES**Suitable Extinguishing Media:**

Water spray, Carbon Dioxide, Dry Chemical Powder, Appropriate Foam.

Special Risks:

Development of hazardous combustion gases or vapors possible in the event of fire. The following may develop in the event of fire: Nitrogen Oxides, Hydrochloric Acid, Carbon Monoxide, Carbon Dioxide

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:**

Do not inhale vapors/aerosols. Avoid substance contact. Ensure supply of fresh air in enclosed rooms. Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Environmental Precautions:

Do not allow to enter sewerage system.

Additional Notes:

Sweep up, place in a bag and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE**Handling:**

Avoid generation of vapors/aerosols. Do not inhale substance.

Storage:

Store at room temperature (+15 to +25°C). Tightly closed in a dry and well-ventilated place.

Safety Data Sheet

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SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

<i>Type</i>	<i>Value</i>	<i>Source</i>	<i>Type</i>	<i>Value</i>	<i>Source</i>
Ammonium Chloride					
TWA (8hr)	10 mg/m ³ (fume)	Belgium	TWA (8hr)	10 mg/m ³ (fume)	Canada (Ontario)
TWA (8hr)	10 mg/m ³ (fume)	Canada (Quebec)	TWA (8hr)	10 mg/m ³ (fume)	France
TWA (8hr)	10 mg/m ³	Greece	TWA (8hr)	10 mg/m ³ (steam and fumes)	Poland
TWA (8hr)	10 mg/m ³ (fume)	Portugal	TWA (8hr)	5 mg/m ³	Romania
TWA (8hr)	10 mg/m ³	Spain	TWA (8hr)	10 mg/m ³ (fume)	UK
Ammonium Hydroxide Solution					
TWA (8hr)	14 mg/m ³ (as ammonia)	Belgium	TWA (8hr)	17 mg/m ³	Canada (Ontario)
TWA (8hr)	17 mg/m ³	Canada (Quebec)	TWA (8hr)	7 mg/m ³ (as ammonia)	France
TWA (8hr)	14 mg/m ³ (as ammonia)	Germany	TWA (8hr)	35 mg/m ³ (as ammonia)	Greece
TWA (8hr)	14 mg/m ³ (as ammonia)	Hungary	TWA (8hr)	14 mg/m ³ (as ammonia)	Netherlands
TWA (8hr)	14 mg/m ³ (as ammonia)	Poland	TWA (8hr)	25 ppm (as ammonia)	Portugal
TWA (8hr)	14 mg/m ³ (as ammonia)	Romania	TWA (8hr)	14 mg/m ³ (as ammonia)	Spain
TWA (8hr)	18 mg/m ³ (as ammonia)	UK	TWA (8hr)	25 ppm (as ammonia)	USA (ACGIH)
TWA (8hr)	50 ppm (as ammonia)	USA (OSHA)			
Ethanol					
TWA (8hr)	1907 mg/m ³	Belgium	TWA (8hr)	1900 mg/m ³	Canada (Ontario)
TWA (8hr)	1880 mg/m ³	Canada (Quebec)	TWA (8hr)	1900 mg/m ³	France
TWA (8hr)	960 mg/m ³	Germany	TWA (8hr)	1900 mg/m ³	Greece
TWA (8hr)	1900 mg/m ³	Hungary	TWA (8hr)	260 mg/m ³	Netherlands
TWA (8hr)	1900 mg/m ³	Poland	TWA (8hr)	1000 ppm	Portugal
TWA (8hr)	1900 mg/m ³	Romania	TWA (8hr)	1910 mg/m ³	Spain
TWA (8hr)	1920 mg/m ³	UK	TWA (8hr)	1000 ppm	USA (ACGIH)
TWA (8hr)	1000 ppm	USA (OSHA)			

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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. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Respiratory Protection:

Required when vapors/aerosols are generated. Work under hood.

Protective Gloves:

Rubber or plastic

Eye Protection:

Goggles or face mask

Industrial Hygiene:

Immediately change contaminated clothing. Wash hands and face after working with substance. Work under hood. Do not inhale substance. Avoid generation of vapors/aerosols. Under no circumstances eat or drink at workplace.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance: Orange liquid

Odor: Pungent

Density at 20°C: 0.9 g/cm³

Melting Point: NA

Boiling Point: ND

Solubility: Soluble

pH at 20°C: 9.4

Explosion Limit: ND

Flash Point: ND

Thermal Decomp.: NA

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating

Hazardous Polymerization:

Will not occur.

Further Information:

Explosive with air in a vaporous/gaseous state when heated.

Hazardous Decomposition Products:

In the event of fire: See section 5.

Substances to be Avoided:

Strong oxidizing agents, strong alkalis (ammonia formed), hydrochloric acid

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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, bronchitis, pulmonary edema. When vapors/aerosols are generated: strong irritant effect.
- Skin Contact:** Irritations.
- Eye Contact:** Burns.
- Ingestion:** Mucosal irritations.
- Further Data:** The following applies to ammonium salts in general: after swallowing: local irritation symptoms, nausea, vomiting, diarrhea. Systemic effect: after the uptake of very large quantities: drop in blood pressure, collapse, CNS disorders, spasms, narcotic conditions, respiratory paralysis, haemolysis. The product should be handled with usual care when dealing with chemicals.

Component Toxicity

Acute Toxicity:

Chronic Toxicity:

Not Available

Ammonium Chloride

LD50: Oral - Rat - 1650 mg/kg

Ammonium Hydroxide Solution

LD50: Oral - Rat - 350 mg/kg

Ethanol

LD50: Oral - Rat - 7060 mg/kg

Additional Data:

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Ammonia:

Subacute to chronic toxicity

Sensitization:

Sensitization test (guinea pig): negative.

No carcinogenic properties suspected.

No mutagenic properties suspected.

Bacterial mutagenicity: Salmonella typhimurium: negative.

Bacterial mutagenicity: Escherichia coli: negative.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Ammonium Chloride – as the pure substance

Specific symptoms in animal studies:

Eye irritation test (rabbit): Severe irritations.

Skin irritation test (rabbit): No irritation.

Subacute to chronic toxicity

Sensitization:

Sensitization test (guinea pig): No sensitizing effect.

Non carcinogenic in animal experiments.

Mutagenicity (mammal cell test): micronucleus negative.

Bacterial mutagenicity: Ames test: negative.

No teratogenic effect in animal experiments.

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SECTION 12: ECOLOGICAL INFORMATION

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

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Ammonia:

Abiotic degradation:

Slow degradation.

Biologic degradation:

Not readily degradable.

Behavior in environmental compartments:

Distribution: log p(o/w): -1.38 (experimental).

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Fish toxicity: Onchorhynchus mykiss LC 50 : 0.53 mg/L /96 h (anhydrous substance)

Daphnia toxicity: Daphnia pulicaria EC 50 : 1.16 mg/L /48 h (anhydrous substance)

Daphnia magna EC 50 : 24 mg/L /48 h (anhydrous substance)

Bacterial toxicity: Photobacterium phosphoreum EC 50 : 2 mg/L /5 min (anhydrous substance)

Biological effects: Highly toxic for aquatic organisms. Harmful effect due to pH shift. Forms toxic mixtures in water, dilution measures notwithstanding.

APPLICABLE TO PARTIAL COMPONENT:

The following applies to Ammonium chloride – as the pure substance

Biologic degradation:

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

Behavior in environmental compartments:

Distribution: log p(o/w): -4.37 (calculated).

No bioaccumulation is to be expected (log P(o/w) <1).

Ecotoxic effects:

Biological effects:

Fish toxicity: C. carpio LC 50 : 209 mg/L /96 h; L. macrochirus LC 50 : 725 mg/L /96 h.

Further ecologic data:

The following applies to ammonium ions in general: biological effects: fish: toxic as from 0.3 mg/L ; nourishment for fish: toxic as from 0.3 mg/L .

Further Data: Do not allow to enter waters, waste water, 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

	<i>Land (ADR/RID):</i>	<i>Sea (IMDG):</i>	<i>Air (ICAO/IATA):</i>
UN No.:	1170	1170	1170
Proper Shipping Name:	Ethanol solution	Ethanol solution	Ethanol solution
Class (Sub Risk):	3	3	3
Packing Group:	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

Safety Data SheetAccording to Regulation (EC) No. 1907/2006
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Canadian Regulation SOR/88-66**SECTION 16: OTHER INFORMATION*****Text of phrases under Section 3***

R11: Highly Flammable
R22: Harmful if swallowed.
R34: Causes burns.
R36: Irritating to eyes.
R41: Risk of serious damage to eyes.
R50: Very toxic to aquatic organisms.
H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H400: Very toxic to aquatic life.

Revision Information

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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.