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HI 3854A-0
Zinc Reagent A

Safety Data Sheet

According 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 3854A-0 Zinc Reagent A

Application: Determination of Zinc 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

Toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SECTION 3: COMPOSITION AND COMPONENT INFORMATION

Component: Potassium Cyanide

EC-No.: 205-792-3

CAS-No.: 151-50-8

Hazard: T+, N

Phrases: R: 26/27/28-32-50/53

Content: > 2.5% - < 7%

SECTION 4: FIRST AID MEASURES

After Inhalation: Remove to fresh air. Immediately call in physician.

After Skin Contact: Wash affected area with plenty of water. Remove contaminated clothing. Call in physician.

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, induce vomiting, administer activated charcoal (20-40 g in 10% slurry). Immediately call in physician. Instructions for the doctor: Keep antidotes ready (sodium thiosulfate; dimethylaminophenol; Cobalt-EDTA.)

General Information: Rapid action is needed immediately! First-aid personnel need to ensure self-protection! Immediately call in physician (mentioning hydrocyanic acid poisoning). If breathing stops: immediately apply mechanical ventilation, if necessary also oxygen. 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 the event of fire: Cyanide, Boron Compounds, Nitrogen Oxides, Potassium Oxide

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 dusts. 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. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE

Handling:

Work under hood. Avoid generation of dusts. Do not inhale substance.

Storage:

Store at room temperature (+15 to +25 °C). Tightly closed in a dry and well-ventilated place. Protect from moisture. Accessible only for authorized persons.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Type	*Value*	*Source*	*Type*	*Value*	*Source*
Potassium Cyanide					
Ceiling	5 mg/m³	Belgium	Ceiling	5 mg (CN)/m³	Canada (Ontario)
Ceiling	11 mg (CN)/m³	Canada (Quebec)	TWA (8hr)	5 mg (CN)/m³	France
TWA (8hr)	5 mg (CN)/m³	Greece	TWA (8hr)	5 mg (CN)/m³	Hungary
TWA (8hr)	2.4 mg/m³	Netherlands	Ceiling	5 mg (CN)/m³	Poland
Ceiling	5 mg (CN)/m³	Portugal	TWA (8hr)	0.5 mg (CN)/m³	Romania
Ceiling	5 mg (CN)/m³	Spain	TWA (8hr)	5 mg (CN)/m³	UK
TWA (8hr)	5 mg/m³	USA (ACGIH)	TWA (8hr)	5 mg (CN)/m³	USA (OSHA)

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 dusts are generated. Work under hood.

Protective Gloves:

Rubber or plastic

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. Work under hood. Do not inhale substance. Avoid generation of dusts. Under no circumstances eat or drink at workplace.

SECTION 9: PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Purple powder	***Odor:***	Odorless	***Density at 20° C:***	ND
Melting Point:	155°C (311°F)	***Boiling Point:***	NA	***Solubility:***	Soluble in water. Solubility in acid: generates HCN!
pH at 20° C:	8.7 at 5 g/L	***Explosion Limit:***	NA	***Flash Point:***	NA
Thermal Decomp.:	NA				

SECTION 10: STABILITY AND REACTIVITY

Conditions to be Avoided:

Heating to decomposition.

Hazardous Decomposition Products:

Contact with acids/acid fumes releases toxic cyanide gas. Toxic gases or vapors in the event of fire, see section 5.

Hazardous Polymerization:

Will not occur.

Substances to be Avoided:

Incompatible with acids

Further Information:

Not available

SECTION 11: TOXICOLOGICAL INFORMATION

Product Toxicity

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

Potential Health Effects:

Inhalation:	Mucosal irritations, nausea, vomiting, tachycardia, dyspnoea, dizziness, unconsciousness.
Skin Contact:	Danger of skin absorption.
Eye Contact:	Slight irritations.
Ingestion:	Absortion. Lethal effects after absorption, respiratory paralysis, cardiovascular failure.
Further Data:	The following applies to cyanogen compounds/nitriles in general: utmost caution! Release of hydrocyanic acid is possible – blockade of cellular respiration. Cardiovascular disorders, dyspnoea, unconsciousness. The product should be handled with particular care. Further toxicological information: Quantity contained may be sufficient to cause lethal intoxication.

Component Toxicity

Acute Toxicity:

Potassium Cyanide

LD50: Oral - Rat - 5 mg/kg

Chronic Toxicity:

Not Available

Additional Data:

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Potassium Cyanide – as the pure substance:
Specific symptoms in animal studies:
Eye irritation test (rabbit): irritations.
Subacute to chronic toxicity:
Bacterial mutagenicity: Salmonella typhimurium: negative.
Bacterial mutagenicity: Ames test: negative.
Route of exposure
Skin Contact: danger of skin absorption.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: irritations.
Inhalation: May be harmful if inhaled. Mucosal irritations, nausea, vomiting, tachycardia, dyspnoea, dizziness, unconsciousness.
Ingestion: lethal effects after absorption, respiratory paralysis, cardiovascular failure.

SECTION 12: ECOLOGICAL INFORMATION

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

APPLICABLE TO PARTIAL COMPONENT:
The following applies to Potassium cyanide – as the pure substance:
Abiotic degradation:
Slow degradation. (air)
Behavior in environmental compartments:
BCF: 0.3 (calculated);
Not bioaccumulative (BCF = 1).
Ecotoxicological effects
Biological effects:
Very toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Hazard for drinking water supplies. Forms toxic mixtures in water, dilution measures notwithstanding.
Reacts with water to form toxic decomposition products.
Fish toxicity: L.macrochirus LC50 : 0.45 mg/L /96 h (in soft water).
Daphnia toxicity: Daphnia magna EC50 : 2 mg/L /48 h; Daphnia magna EC50 : 0.53 mg/L /24 h.
Bacterial toxicity: activated sludge EC50 : 0.6-2.3 mg/L /30 min.
Maximum permissible toxic concentration:
Algeal toxicity: Sc.quadricauda IC5 : 0.03 mg/L /8 d (referred to cyanide ions);
Bacterial toxicity: Ps.putida EC5 : 0.001 mg/L /16 h (referred to cyanide ions); M.aeruginosa EC5 : 0.07 mg/L /8 d (referred to cyanide ions);
Protozoa: E.sulcatum EC5 : 1.8-1.9 mg/L /72 h (referred to cyanide ions).

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

Land:

ADR/RID: 9, II
UN-No. : 3316
Name : CHEMICAL KIT

Sea:

IMDG: 9/UN 3316/PG II
Name : CHEMICAL KIT
Marine pollutant: no
Severe marine pollutant: no

Air:

ICAO/IATA: 9/UN 3316/PG II
Name: CHEMICAL KIT

Transport data applies to the COMPLETE KIT!

SECTION 15: REGULATORY INFORMATION

Labeling according to EC Directives:

Symbol: T: Toxic
N: Dangerous for the environment

R-phrases: 23/24/25-32-51/53: Toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrases: 36/37-45-53-60-61: Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid exposure - obtain special instructions before use. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety data sheets.

Contains: Potassium cyanide. Reduced labelling on the container due to small quantity, as according to directive 1999/45/CE

SECTION 16: OTHER INFORMATION

Text of R-phrases under Section 3

26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.
32: Contact with acids liberates very toxic gas.
50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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.