

World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00379

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Alkaline Cyanide Reagent
Catalog Number: 2122326

Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

Emergency Telephone Numbers:
(Medical and Transportation)
(303) 623-5716 24 Hour Service
(515)232-2533 8am - 4pm CST

MSDS Number: M00379

Chemical Name: Not applicable

CAS No.: Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

PIN: 2922

Intended Use: Determination of manganese

Date of MSDS Preparation:

Day: 15

Month: October

Year: 2009

MSDS Prepared: MSDS prepared by Product Compliance Department extension 3350

2. COMPOSITION / INFORMATION ON INGREDIENTS

Sodium Hydroxide

Percent Range: 1.0 - 5.0

Percent Range Units: weight / volume

CAS No.: 1310-73-2

LD50: Oral rat LDLo = 500 mg/kg.

LC50: None reported

TLV: 2 mg/m³ Ceiling/STEL

PEL: 2 mg/m³

Ingredient WHMIS Symbol: Corrosive

Demineralized Water

Percent Range: 90.0 - 100.0

Percent Range Units: volume / volume

CAS No.: 7732-18-5

LD50: None reported

LC50: None reported

TLV: Not established

PEL: Not established

Ingredient WHMIS Symbol: Not applicable

Sodium Cyanide

Percent Range: 5.0 - 15.0

Percent Range Units: weight / volume

CAS No.: 143-33-9

LD50: Oral rat LD50 = 6440 µg/kg; Oral human LDLo = 2857 µg/kg

LC50: None reported
TLV: 5 mg/m³ (skin)
PEL: 5 mg/m³ (skin)
Ingredient WHMIS Symbol: Acute Poison

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: Clear, colorless liquid

Physical State: Liquid

Odor: None

CAUSES BURNS HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN

CONTACT WITH ACIDS FORMS TOXIC FUMES

Emergency response to cyanide exposure should be planned and practiced prior to work with cyanides. First responders should start treatment and get medical attention immediately. Antidote: break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat 5 times at 15 second intervals. Transport to hospital immediately. Note to Physician: Have a cyanide first aid kit available. If patient has not responded to amyl nitrite, inject intravenously 10 ml of a 3% solution of sodium nitrite at a rate not greater than 2.5 - 5 ml/min. Follow directly with 50 ml of a 25 % solution of sodium thiosulfate at the same rate by the same route. Keep patient under observation. If signs of poisoning persist or reappear, repeat nitrite and thiosulfate injections 1 hour later in one-half the original doses.

HMIS:

Health: 3

Flammability: 0

Reactivity: 0

Protective Equipment: X - See protective equipment, Section 8.

Potential Health Effects:

Eye Contact: Causes eye burns.

Skin Contact: Causes burns.

Skin Absorption: Harmful if absorbed through the skin Effects similar to those of ingestion

Target Organs: Central nervous system

Ingestion: Toxic May be rapidly fatal. Causes: cyanosis (a reduction of the blood's ability to carry oxygen, giving a bluish discoloration) burns of the mouth and esophagus anxiety headache May cause: confusion irregular heartbeat convulsions coma death

Target Organs: Central nervous system Brain

Inhalation: Toxic. Effects similar to those of ingestion.

Target Organs: Central nervous system Brain

Medical Conditions Aggravated: Pre-existing: Skin conditions

Chronic Effects: Chronic overexposure may cause central nervous system effects

Cancer / Reproductive Toxicity Information:

This product does NOT contain any IARC listed chemicals.

This product does NOT contain any NTP listed chemicals.

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental mutagen.

Toxicologically Synergistic Products: None reported

WHMIS Hazard Classification: Class E - Corrosive material Class D, Division 1, Subdivision B - Toxic material (immediate effects)

WHMIS Symbols: Corrosive Acute Poison

4. FIRST AID

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Wash skin with plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

Ingestion (First Aid): Call physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: Remove to fresh air. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: During a fire, irritating and highly toxic gases may be generated by thermal decomposition.

Flash Point: Not applicable

Method: Not applicable

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Autoignition Temperature: Not available

Hazardous Combustion Products: Toxic fumes of: cyanide compounds sodium monoxide

Fire / Explosion Hazards: May react violently with: strong acids

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

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: Releases of this material may contaminate the environment. Stop spilled material from being released to the environment. Absorb spilled liquid with non-reactive sorbent material.

Clean-up Technique: Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Carefully mist spill with bleach until saturated. Scoop up slurry into a large beaker. Oxidize spilled material with a 50% excess of bleach containing at least 5% sodium hypochlorite. Allow to react for 24 hours in a fume hood. Flush reacted material to the drain with a large excess of water. Decontaminate area with bleach solution.

Evacuation Procedure: Evacuate general area (50 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. Deny access to unnecessary and unprotected personnel. If conditions warrant, increase the size of the evacuation.

D.O.T. Emergency Response Guide Number: 154

7. HANDLING / STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe mist or vapors. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Keep away from: acids / acid fumes. Protect from: heat freezing

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have a safety shower nearby. Have an eyewash station nearby. Use a fume hood to avoid exposure to dust, mist or vapor. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: chemical splash goggles

Skin Protection: neoprene latex gloves lab coat

Inhalation Protection: laboratory fume hood

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Keep away from: acids/acid fumes Protect from: heat freezing

TLV: Cyanide 5 mg/m³ (skin)

PEL: Cyanide 5 mg/m³ (skin)

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Clear, colorless liquid

Physical State: Liquid

Molecular Weight: Not applicable

Odor: None

pH: 12.3

Vapor Pressure: Not available

Vapor Density (air = 1): Not available

Boiling Point: 92 C
Melting Point: Not available
Specific Gravity (water = 1): 1.112
Evaporation Rate (water = 1): 0.57
Volatile Organic Compounds Content: Not applicable
Coefficient of Water / Oil: Not applicable
Solubility:
 Water: Miscible
 Acid: Produces HCN
 Other: Not determined
Metal Corrosivity:
 Steel: Not determined
 Aluminum: Not determined

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Extreme temperatures
Reactivity / Incompatibility: Incompatible with: acids
Hazardous Decomposition: Contact with acids/acid fumes releases toxic cyanide gas.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
 LD50: Oral rat LD50 = 69 mg/kg
 LC50: None reported
 Dermal Toxicity Data: None reported
 Skin and Eye Irritation Data: None reported
 Mutation Data: None reported
 Reproductive Effects Data: Sodium Cyanide: oral rat TCLo = 2148 mg/kg male 13 week pre-mating
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Ingredient Toxicological Data: Sodium Cyanide: Oral rat LD50 = 6440 µg/kg; Oral human LDLo = 2857 µg/kg Sodium Hydroxide: Oral rabbit LDLo = 500 mg/kg

12. ECOLOGICAL INFORMATION

Product Ecological Information: --
No ecological data available for this product.
Ingredient Ecological Information: --
No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

Special Instructions (Disposal): Dispose of material in an E.P.A. approved hazardous waste facility.
Empty Containers: Rinse three times with an appropriate solvent. Rinsate from empty containers is hazardous waste and should be disposed of at an E.P.A. approved facility.
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.

14. TRANSPORT INFORMATION

T.D.G.:
 Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S.
 (Sodium Hydroxide/Sodium Cyanide Solution)
 Hazard Class: 8
 PIN: 2922
 Group: II
 Subsidiary Risk: 6.1

Additional Information: There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories:

Canadian Inventory Status: All ingredients of this product are DSL Listed.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

16. OTHER INFORMATION

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Outside Testing. In-house information. Technical Judgment. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992.

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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