



# SAFETY DATA SHEET

Be Right™

Issue Date 22-Aug-2016

Revision Date 27-Sep-2016

Version 2

Page 1 / 19

## 1. IDENTIFICATION

### Product identifier

**Product Name** Alkaline Cyanide Reagent

### Other means of identification

**Product Code(s)** 2122332

**Safety data sheet number** M00379

**UN/ID no** UN2922

### Recommended use of the chemical and restrictions on use

**Recommended Use** Laboratory reagent. Determination of manganese.

**Uses advised against** None.

**Restrictions on use** None.

### Details of the supplier of the safety data sheet

#### Manufacturer Address

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

#### Emergency telephone number

(303) 623-5716 - 24 Hour Service (515)232-2533 - 8am - 4pm CST

## 2. HAZARDS IDENTIFICATION

### Classification

#### Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 2
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

#### Hazards not otherwise classified (HNOC)

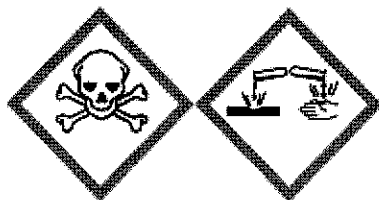
Not applicable

#### Label elements

**Signal word** - Danger

Product Code(s) 2122332  
Issue Date 22-Aug-2016  
Version 2

Product Name Alkaline Cyanide Reagent  
Revision Date 27-Sep-2016  
Page 2 / 19



**Hazard statements**

H301 - Toxic if swallowed  
H310 - Fatal in contact with skin  
H331 - Toxic if inhaled  
H314 - Causes severe skin burns and eye damage

**Precautionary statements**

P264 - Wash face, hands and any exposed skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P262 - Do not get in eyes, on skin, or on clothing  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P271 - Use only outdoors or in a well-ventilated area  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P363 - Wash contaminated clothing before reuse  
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P330 - Rinse mouth  
P331 - Do NOT induce vomiting  
P310 - Immediately call a POISON CENTER or doctor/physician  
P405 - Store locked up  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other Information**

Very toxic to aquatic life with long lasting effects  
Very toxic to aquatic life

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance**

Not applicable

**Mixture**

Percent ranges are used where confidential product information is applicable.

Chemical Name	CAS No	Percent Range	HMRIC #
Sodium cyanide	143-33-9	5 - 10%	-
Sodium hydroxide	1310-73-2	1 - 5%	-

#### 4. FIRST AID MEASURES

##### Description of first aid measures

<b>General advice</b>	In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
<b>Skin contact</b>	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.
<b>Inhalation</b>	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a physician immediately.
<b>Ingestion</b>	IF SWALLOWED: Rinse Mouth. Call a physician immediately. Do NOT induce vomiting.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

##### Most important symptoms and effects, both acute and delayed

**Symptoms** See Section 11: TOXICOLOGICAL INFORMATION.

##### Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media** Caution: Use of water spray when fighting fire may be inefficient.

##### Flammable properties

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

##### Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

##### Hazardous combustion products

Cyanide compounds. Sodium monoxide.

##### Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

##### Special protective equipment for fire-fighters

Wear self-contained breathing apparatus and protective suit

#### 6. ACCIDENTAL RELEASE MEASURES

##### **U.S. Notice**

Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals.

**EC 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.

**WHMIS 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.

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Evacuate personnel to safe areas. Do not touch or walk through spilled material. Ventilate affected area. Use personal protective equipment as required.

**For emergency responders** Use personal protection recommended in Section 8.

**Environmental precautions**

**Environmental precautions** Avoid release to the environment. See Section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Neutralize spill if necessary. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local, state and federal regulations or laws.

**Emergency Response Guide Number** 154

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Flammability class** Not applicable

**Incompatible materials** Incompatible with strong acids and bases. Incompatible with oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium cyanide 5 - 10%	S* Ceiling: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup> (vacated) TWA: 5 mg/m <sup>3</sup> *	IDLH: 25 mg/m <sup>3</sup> CN Ceiling: 4.7 ppm CN 10 min Ceiling: 5 mg/m <sup>3</sup> CN 10 min
Sodium hydroxide 1 - 5%	Ceiling: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> (vacated) Ceiling: 2 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>

Chemical Name	Alberta OEL	British Columbia	Manitoba OEL	New Brunswick	Newfoundland &
---------------	-------------	------------------	--------------	---------------	----------------

		OEL		OEL	Labrador OEL
Sodium cyanide 5 - 10%	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*
Sodium hydroxide 1 - 5%	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>

Chemical Name	Northwest Territories OEL	Nova Scotia OEL	Nunavut OEL	Ontario TWA	Prince Edward Island OEL
Sodium cyanide 5 - 10%	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup>
Sodium hydroxide 1 - 5%	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>

Chemical Name	Quebec OEL	Saskatchewan OEL	Yukon OEL
Sodium cyanide 5 - 10%	Ceiling: 10 ppm Ceiling: 11 mg/m <sup>3</sup> SKN*	Ceiling: 5 mg/m <sup>3</sup> Ceiling: 4.7 ppm SKN*	STEL: 5 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup> SKN*
Sodium hydroxide 1 - 5%	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>	Ceiling: 2 mg/m <sup>3</sup>

**Other Information** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

**Legend** See section 16 for terms and abbreviations

**Appropriate engineering controls**

**Engineering Controls** Showers  
 Eyewash stations  
 Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear tight sealing safety goggles and/or face protection shield.

**Skin and body protection** Wear protective gloves and protective clothing.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Wash hands thoroughly after handling. Regular cleaning of equipment, work area and clothing is recommended.

**Environmental exposure controls**

Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

**Physical state** Liquid

**Gas Under Pressure** Not classified according to GHS criteria

**Appearance** aqueous solution **Color** colorless

**Odor** None **Odor threshold** No data available

Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 6 / 19

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Molecular weight	No data available	
pH	12.3	
Melting point/freezing point	~ -11 °C / 12 °F	Estimation based on theoretical calculation
Boiling point / boiling range	92 °C / 198 °F	
Evaporation rate	0.57 (water = 1)	
Vapor pressure	22.652 mm Hg / 3.02 kPa at 25 °C / 77 °F	Estimation based on theoretical calculation
Vapor density (air = 1)	0.62 (air = 1)	
Specific gravity (water = 1 / air = 1)	1.112	
Partition Coefficient (n-octanol/water)	Not applicable	
Soil Organic Carbon-Water Partition Coefficient	Not applicable	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Dynamic viscosity	No data available	
Kinematic viscosity	No data available	

**Solubility(ies)**

**Water solubility**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble Releases toxic hydrogen cyanide gas.	No data available	No information available

**Solubility in other solvents**

<u>Chemical Name</u>	<u>Solubility classification</u>	<u>Solubility</u>	<u>Solubility Temperature</u>
None reported	No information available	No data available	No information available

**Other Information**

<b>Metal Corrosivity</b>	Not classified as corrosive to metal according to GHS criteria
<b>Steel Corrosion Rate</b>	No data available
<b>Aluminum Corrosion Rate</b>	No data available
<b>Bulk density</b>	Not applicable
<b>Explosive properties</b>	Not classified according to GHS criteria.
<b>Explosion data</b>	No data available

**Product Code(s)** 2122332  
**Issue Date** 22-Aug-2016  
**Version** 2

**Product Name** Alkaline Cyanide Reagent  
**Revision Date** 27-Sep-2016  
**Page** 7 / 19

<b>Upper explosion limit</b>	No data available
<b>Lower explosion limit</b>	No data available
<b>Flammable properties</b>	During a fire, irritating and highly toxic gases may be generated by thermal decomposition.
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No data available
<b>Lower flammability limit:</b>	No data available
<b>Flash point</b>	No data available
<b>Method</b>	No information available
<b>Oxidizing properties</b>	Not classified according to GHS criteria.
<b>Reactivity properties</b>	Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria.

## 10. STABILITY AND REACTIVITY

### Reactivity properties

Not classified as self-reactive, pyrophoric, self-heating or emitting flammable gases in contact with water according to GHS criteria

### Chemical stability

Stable under recommended storage conditions.

### Special dangers of the product

None reported

### Possibility of Hazardous Reactions

None under normal processing.

**Hazardous polymerization**      Hazardous polymerization does not occur.

### Conditions to avoid

Extreme temperatures. Exposure to air or moisture over prolonged periods. Poor Ventilation.

### Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

### Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

### Explosive properties

Not classified according to GHS criteria.

**Upper explosion limit**      No data available

**Lower explosion limit**      No data available

### Autoignition temperature

No data available

Product Code(s) 2122332  
Issue Date 22-Aug-2016  
Version 2

Product Name Alkaline Cyanide Reagent  
Revision Date 27-Sep-2016  
Page 8 / 19

**Sensitivity to Static Discharge**  
None reported

**Sensitivity to Mechanical Impact**  
None reported

**11. TOXICOLOGICAL INFORMATION**

NIOSH (RTECS) Number None reported

**Information on Likely Routes of Exposure**

<b>Product Information</b>	Fatal in contact with skin. Toxic by ingestion. Toxic if inhaled. Corrosive to skin. Corrosive to eyes.
<b>Inhalation</b>	Avoid breathing dust/fume/gas/mist/vapors/spray. Toxic by inhalation. Immediate medical attention is required. Causes burns. Corrosive by inhalation.
<b>Eye contact</b>	Corrosive to the eyes and may cause severe damage including blindness. Causes burns.
<b>Skin contact</b>	Fatal in contact with skin. Cause severe skin burns and eye damage.
<b>Ingestion</b>	Toxic if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts.
<b>Aggravated Medical Conditions</b>	Eye disorders. Skin disorders. Respiratory disorders.
<b>Toxicologically synergistic products</b>	None known.
<b>Toxicokinetics, metabolism and distribution</b>	See ingredients information below.

<b>Chemical Name</b>	<b>Toxicokinetics, metabolism and distribution</b>
Sodium cyanide (5 - 10%) CAS#: 143-33-9	NaCN is absorbed across the gastrointestinal mucosa after oral intake, and through the skin and the eye after direct contact.

**Product Acute Toxicity Data**

Test data reported below

**Oral Exposure Route**



Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 9 / 19

<u>Endpoint type</u>	<u>Reported dose</u>	<u>Toxicological effects</u>	<u>Key literature references and sources for data</u>
Rat LD <sub>50</sub>	69 mg/kg	<b>Behavioral</b> Clonic convulsions Coma Decreased locomotor activity Lethargy Prostration Tonic convulsions Tremor <b>Eye</b> Exophthalmos <b>Gastrointestinal</b> Inflammation of the stomach <b>Lungs, Thorax, or Respiration</b> Congestion of the lungs Dyspnea <b>Skin and Appendages</b> Piloerection Skin abnormalities	Outside testing

**Dermal Exposure Route**

<u>Endpoint type</u>	<u>Reported dose</u>	<u>Toxicological effects</u>	<u>Key literature references and sources for data</u>
Rabbit LD <sub>50</sub>	200 mg/kg	<b>Behavioral</b> Coma Lethargy Prostration Tonic convulsions Tremors <b>Eye</b> Exophthalmos <b>Gastrointestinal</b> Inflammation of the stomach <b>Lungs, Thorax, or Respiration</b> Congestion of the lungs Dyspnea <b>Skin and Appendages</b> Piloerection Skin abnormalities	Outside testing

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (inhalation-dust/mist)	0.67 mg/L
-------------------------------	-----------

**Ingredient Acute Toxicity Data**

**Oral Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Rat LD <sub>50</sub>	4.8 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	Rabbit LD <sub>50</sub>	500 mg/kg	None reported	None reported	No information available

**Dermal Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Rabbit LD <sub>50</sub>	7.7 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	Rabbit LD <sub>50</sub>	1350 mg/kg	None reported	None reported	IUCLID (The International Uniform Chemical Information Database)

**Inhalation (Dust/Mist) Exposure Route**

Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Rat LC <sub>50</sub>	2.56 mg/L	4 hours	None reported	IUCLID (The International Uniform Chemical Information Database)
Chemical Name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Rat LC <sub>50</sub>	.16 mg/L	1 hours	None reported	No information available

**Inhalation (Vapor) Exposure Route**

No data available

**Inhalation (Gas) Exposure Route**

No data available

**Product Skin Corrosion/Irritation Data**

No data available.

Exposure time	Results	Key literature references and sources for data
1 hours	Corrosive to skin	Outside testing

**Ingredient Skin Corrosion/Irritation Data**

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	Patch test	Human	20 mg	24 hours	Corrosive to skin	RTECS (Registry of Toxic Effects of Chemical Substances)

**Product Serious Eye Damage/Eye Irritation Data**

No data available.

**Ingredient Eye Damage/Eye Irritation Data**

Chemical Name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	Standard Draize Test	Rabbit	0.05 mg	24 hours	Corrosive to eyes	RTECS (Registry of Toxic Effects of Chemical Substances)

**Sensitization Information**

**Product Sensitization Data**

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

**Ingredient Sensitization Data**

Skin Sensitization Exposure Route No data available.

Respiratory Sensitization Exposure Route No data available.

**Chronic Toxicity Information**

**Product Repeat Dose Toxicity Data**

Oral Exposure Route No data available.

Dermal Exposure Route No data available.

Inhalation (Dust/Mist) Exposure Route No data available.

Inhalation (Vapor) Exposure Route No data available.

Inhalation (Gas) Exposure Route No data available.

**Ingredient Repeat Dose Toxicity Data**

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Chemical Name	CAS No	ACGIH	IARC	NTP	OSHA
Sodium cyanide	143-33-9	-	-	-	-
Sodium hydroxide	1310-73-2	-	-	-	-

**Legend**

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Does not apply
NTP (National Toxicology Program)	Does not apply

Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 12 / 19

OSHA (Occupational Safety and Health Administration of the US Department of Labor)	X - Present
------------------------------------------------------------------------------------	-------------

**Product Carcinogenicity Data** No data available

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

**Ingredient Carcinogenicity Data**

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

**Product Germ Cell Mutagenicity *in vitro* Data**

No data available.

**Ingredient Germ Cell Mutagenicity *in vitro* Data**

Chemical Name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Mutation in microorganisms	<i>Salmonella typhimurium</i>	None reported	None reported		RTECS (Registry of Toxic Effects of Chemical Substances)

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

**Ingredient Germ Cell Mutagenicity *in vivo* Data**

Oral Exposure Route No data available

Dermal Exposure Route No data available

Inhalation (Dust/Mist) Exposure Route No data available

Inhalation (Vapor) Exposure Route No data available

Inhalation (Gas) Exposure Route No data available

Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 13 / 19

Oral Exposure Route No data available  
 Dermal Exposure Route No data available  
 Inhalation (Dust/Mist) Exposure Route No data available  
 Inhalation (Vapor) Exposure Route No data available  
 Inhalation (Gas) Exposure Route No data available

**Ingredient Reproductive Toxicity Data**

Oral Exposure Route No data available  
 Dermal Exposure Route No data available  
 Inhalation (Dust/Mist) Exposure Route No data available  
 Inhalation (Vapor) Exposure Route No data available  
 Inhalation (Gas) Exposure Route No data available

**12. ECOLOGICAL INFORMATION**

Ecotoxicity Very toxic to aquatic life with long lasting effects.

**Product Ecological Data**

**Aquatic toxicity**

Fish No data available  
 Crustacea No data available  
 Algae No data available  
 Terrestrial toxicity  
 Soil No data available  
 Vertebrates No data available  
 Invertebrates No data available

**Ingredient Ecological Data**

**Aquatic toxicity**

**Fish**

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Sodium cyanide (5 - 10%) CAS#: 143-33-9	96 hours	<i>Lepomis macrochirus</i>	LC <sub>50</sub>	0.083 mg/L	IUCLID (The International Uniform Chemical Information Database)
Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	96 hours	<i>Oncorhynchus mykiss</i>	LC <sub>50</sub>	45.4 mg/L	IUCLID (The International Uniform Chemical Information Database)

**Crustacea**

Chemical Name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
---------------	---------------	---------	---------------	---------------	------------------------------------------------

Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 14 / 19

Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	48 Hours	<i>Daphnia sp.</i>	EC <sub>50</sub>	40.4 mg/L	IUCLID (The International Uniform Chemical Information Database)
<b>Chemical Name</b>	<b>Exposure time</b>	<b>Species</b>	<b>Endpoint type</b>	<b>Reported dose</b>	<b>Key literature references and sources for data</b>
Sodium cyanide (5 - 10%) CAS#: 143-33-9	96 hours	<i>Asellus communis</i>	EC <sub>50</sub>	2.33 mg/L	IUCLID (The International Uniform Chemical Information Database)

**Algae** No data available

**Terrestrial toxicity**

**Soil** No data available

**Vertebrates** No data available

**Invertebrates** No data available

**Other Information**

Canadian Environmental Protection Act (CEPA) - Domestic Substances List (DSL): Environmentally Hazardous Substances Categorizations					
Chemical Name	CAS No	Category	Persistent	Bioaccumulation	Inherently Toxic to Aquatic Organisms
Sodium cyanide	143-33-9	-	-	-	-
Sodium hydroxide	1310-73-2	-	-	-	-

**Persistence and degradability**  
 None known.

**Product Biodegradability Data**  
 If available, see ingredient data below.

**Ingredient Biodegradability Data**  
 Test data reported below

Chemical Name	Test method	Biodegradation	Exposure time	Results
Sodium hydroxide (1 - 5%) CAS#: 1310-73-2	None reported	None reported	None reported	Readily biodegradable

**Bioaccumulation**  
 None known.

**Product Bioaccumulation Data** Test data reported below.

**Ingredient Bioaccumulation Data** No data available

**Additional information**

**Product Information**

**Partition Coefficient (n-octanol/water)** Not applicable

Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 15 / 19

**Ingredient Information**

**Mobility**

Mobility in soil: High mobility. If available, see ingredient data below.

**Product Information**

Soil Organic Carbon-Water Partition Coefficient Not applicable

Ingredient Information No data available

**Additional information**

**Water solubility**

**Product Information**

<u>Water solubility classification</u>	<u>Water solubility</u>	<u>Water Solubility Temperature</u>
Soluble Releases toxic hydrogen cyanide gas.	No data available	No information available

**Ingredient Information**

<b>Chemical Name</b>	<b>Water solubility classification</b>	<b>Water solubility</b>	<b>Water solubility temperature °C</b>	<b>Water solubility temperature °F</b>
Sodium cyanide CAS#: 143-33-9	Soluble	> 1000 mg/L	25 °C	77 °F
Sodium hydroxide CAS#: 1310-73-2	Completely soluble	420000 mg/L	0 °C	32 °F

**Other adverse effects**

Environmental exposure.

<b>Chemical Name</b>	<b>EU - Endocrine Disruptors Candidate List</b>	<b>EU - Endocrine Disruptors - Evaluated Substances</b>	<b>Endocrine disrupting potential</b>
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Group III Chemical	-	-

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes** Disposal should be in accordance with applicable regional, national, and local laws and regulations.

**Contaminated packaging** Do not reuse container.

**US EPA Waste Number** D002

<b>Chemical Name</b>	<b>RCRA</b>	<b>RCRA - Basis for Listing</b>	<b>RCRA - D Series Wastes</b>	<b>RCRA - U Series Wastes</b>
Sodium cyanide 143-33-9	P106	Included in waste streams: F007, F008, F009, F010, F011	-	-

<b>Chemical Name</b>	<b>RCRA - Halogenated</b>	<b>RCRA - P Series Wastes</b>	<b>RCRA - F Series Wastes</b>	<b>RCRA - K Series Wastes</b>

Product Code(s) 2122332  
Issue Date 22-Aug-2016  
Version 2

Product Name Alkaline Cyanide Reagent  
Revision Date 27-Sep-2016  
Page 16 / 19

Sodium cyanide 143-33-9	Organic Compounds	P106 P030	-	-
----------------------------	-------------------	-----------	---	---

**Special instructions for disposal** Dispose of material in an E.P.A. approved hazardous waste facility.

#### 14. TRANSPORT INFORMATION

##### DOT

UN/ID no UN2922  
Proper shipping name Corrosive Liquid, Toxic, N.O.S.  
DOT Technical Name (Sodium Hydroxide/Sodium Cyanide Solution)  
Hazard Class 8  
Subsidiary class 6.1  
Packing Group II  
Special Provisions Contact with acids forms toxic fumes.  
Marine pollutant This product contains a chemical which is listed as a marine pollutant according to DOT.  
Emergency Response Guide Number 154

##### TDG

UN/ID no UN2922  
Hazard Class 8  
Subsidiary class 6.1  
Packing Group II  
Marine pollutant This product contains a chemical which is listed as a marine pollutant according to TDG.

##### IATA

UN/ID no UN2922  
Proper shipping name Corrosive Liquid, Toxic, N.O.S.  
IATA Technical Name (Sodium Hydroxide/Sodium Cyanide Solution)  
Hazard Class 8  
Subsidiary hazard class 6.1  
Packing Group II  
ERG Code 154

##### IMDG

UN/ID no UN2922  
IMDG Technical Name (Sodium Hydroxide/Sodium Cyanide Solution)  
Hazard Class 8  
Subsidiary hazard class 6.1  
Packing Group II  
Marine pollutant This material meets the definition of a marine pollutant

**Note:** No special precautions necessary.

##### **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 reagent set or kit, the classification given above applies.  
If the item is part of a reagent set or kit the classification would change to the following:  
UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.  
If the item is not regulated, the Chemical Kit classification does not apply.

#### 15. REGULATORY INFORMATION

##### National Inventories

TSCA Complies  
DSL/NDSL Complies

TSCA- United States Toxic Substances Control Act Section 8(b) Inventory  
DSL/NDSL- Canadian Domestic Substances List/Non-Domestic Substances List



Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 17 / 19

**International Inventories**

<b>EINECS/ELINCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>TCSI</b>	Complies
<b>AICS</b>	Complies
<b>NZIoC</b>	Complies

**EINECS/ELINCS**- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS**- Japan Existing and New Chemical Substances  
**IECSC**- China Inventory of Existing Chemical Substances  
**KECL**- Korean Existing and Evaluated Chemical Substances  
**PICCS**- Philippines Inventory of Chemicals and Chemical Substances  
**TCSI**- Taiwan Chemical Substances Inventory  
**AICS**- Australian Inventory of Chemical Substances  
**NZIoC**- New Zealand Inventory of Chemicals

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Sodium cyanide (CAS #: 143-33-9)	1.0

**SARA 311/312 Hazard Categories**

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium cyanide 143-33-9	10 lb	X	X	X
Sodium hydroxide 1310-73-2	1000 lb	-	-	X

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium cyanide 143-33-9	10 lb	10 lb	RQ 10 lb final RQ RQ 4.54 kg final RQ
Sodium hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

**U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues**

Product Code(s) 2122332  
 Issue Date 22-Aug-2016  
 Version 2

Product Name Alkaline Cyanide Reagent  
 Revision Date 27-Sep-2016  
 Page 18 / 19

Chemical Name	U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues
Sodium cyanide (5 - 10%) CAS#: 143-33-9	Sabotage/Contamination

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Sodium cyanide (CAS #: 143-33-9)	Carcinogen Male Reproductive

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium cyanide 143-33-9	X	X	X
Sodium hydroxide 1310-73-2	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

**NFPA and HMIS Classifications**

NFPA	Health hazards - 3	Flammability - 0	Instability - 0	Physical and Chemical Properties -
HMIS	Health hazards - 3	Flammability - 0	Physical hazards - 0	Personal protection - X - See section 8 for more information

**Key or legend to abbreviations and acronyms used in the safety data sheet**

NIOSH IDLH *Immediately Dangerous to Life or Health*  
 ACGIH ACGIH (American Conference of Governmental Industrial Hygienists)  
 NDF *no data*

**Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
MAC	Maximum Allowable Concentration	Ceiling	Ceiling Limit Value
X	Listed	Vacated	These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations.

**Product Code(s)** 2122332  
**Issue Date** 22-Aug-2016  
**Version** 2

**Product Name** Alkaline Cyanide Reagent  
**Revision Date** 27-Sep-2016  
**Page** 19 / 19

SKN\* Skin designation  
RSP+ Respiratory sensitization  
C Carcinogen  
M mutagen

SKN+ Skin sensitization  
\*\* Hazard Designation  
R Reproductive toxicant

**Prepared By** Hach Product Compliance Department

**Issue Date** 22-Aug-2016

**Revision Date** 27-Sep-2016

**Revision Note** None

**Disclaimer**

**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.**

**HACH COMPANY©2016**

**End of Safety Data Sheet**

