SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

21223-26 Alkaline Cyanide Reagent

UFI: Y5RW-3DD5-H00Y-6KGT

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Water analysis

1.3. Details of the supplier of the safety data sheet

Company name:	HACH LANGE GmbH
Street:	Willstätterstr. 11
Place:	D-40549 Düsseldorf
Telephone:	+49 (0)211 5288-383
e-mail:	SDS@hach.com
Internet:	www.de.hach.com
Responsible Department:	HACH LANGE Ltd. 5, Pacific Way Salford Manchester M50 1DL - United Kingdom Tel. +44 (0) 161 872 1487 * Fax +44 (0) 161 848 7324 e-Mail: info-uk@hach.com HACH LANGE Ltd. Unit 1, Chestnut Road Western Industrial Estate IRL-Dublin 12 Tel. +353 (0)1 4602522 e-Mail: info-ie@hach.com

1.4. Emergency telephone number:

Poison Control Center Mainz: Tel: +49 (0) 6131 19240 - 24 hour emergency service -

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Acute toxicity: Acute Tox. 2
Acute toxicity: Acute Tox. 3
Acute toxicity: Acute Tox. 3
Skin corrosion/irritation: Skin Corr. 1B
Serious eye damage/eye irritation: Eye Dam. 1
Hazardous to the aquatic environment: Aquatic Chronic 1
Hazard Statements:
Fatal in contact with skin.
Toxic if swallowed.
Toxic if inhaled.
Causes severe skin burns and eye damage.
Causes serious eye damage.
Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Sodium cyanide
sodium hydroxide; caustic soda

Signal word: Danger

Pictograms:

Hazard statements

H310	Fatal in contact with skin.
H301+H331	Toxic if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

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 and eye/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep 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.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310	Immediately call a POISON CENTER/doctor.

Additional advice on labelling

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
7732-18-5	Water			85-90 %
	231-791-2			
143-33-9	Sodium cyanide			5-10 %
	205-599-4	006-007-00-5		
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Aquatic Acute 1, Aquatic Chronic 1; H310 H330 H300 H400 H410 EUH032			
1310-73-2	sodium hydroxide; caustic soda			1-5 %
	215-185-5	011-002-00-6		
	Skin Corr. 1A; H314			

Full text of H and EUH statements: see section 16.

Specific concentration limits and M-factors

CAS No	EC No	Chemical name	Quantity
	Specific concentration limits and M-factors		
1310-73-2	215-185-5	sodium hydroxide; caustic soda	1-5 %
	Skin Corr. 1A; H314: >= 5 - 100 Skin Corr. 1B; H314: >= 2 - < 5 Skin Irrit. 2; H315: >= 0,5 - < 2 Eye Irrit. 2; H319: >= 0,5 - < 2		

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off all contaminated clothing immediately.

Consult a physician. Show this safety data sheet to the doctor in attendance.

After inhalation

Call a physician or poison control centre immediately. Show this safety data sheet to the doctor in attendance.

After contact with skin

Wash off immediately with plenty of water for at least 15 minutes. Consult a physician. Show this safety data sheet to the doctor in attendance.

After contact with eyes

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Show this safety data sheet to the doctor in attendance.

After ingestion

Call a physician or poison control centre immediately. Show this safety data sheet to the doctor in attendance.

4.2. Most important symptoms and effects, both acute and delayed

Irritation and corrosion, Cough, Shortness of breath, Unconsciousness, Spasm

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Fire may liberate hazardous vapours. (Cyanides)

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.

Additional information

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste.

6.4. Reference to other sections

13. Disposal considerations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Use only in well-ventilated areas. Do not breathe vapours/dust.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep tightly closed in a dry, cool and well-ventilated place. Accessible only for authorized persons.

7.3. Specific end use(s)

Reagent for analysis

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
143-33-9	Sodium cyanide (as cyanide)	-	1		TWA (8 h)	WEL
		-	5		STEL (15 min)	WEL
1310-73-2	Sodium hydroxide	-	2		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Protective and hygiene measures

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Wash hands before breaks and after work.

Eye/face protection

Safety glasses with side-shields

Hand protection

Use barrier skin cream.
Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374. In full contact: Gloves material: Viton, Layer thickness: 0.70 mm, Breakthrough time: >480 min. In splash contact: Glove material: nitrile rubber, Layer thickness 0,20 mm, Breakthrough time: > 30 min

Skin protection

Remove and wash contaminated clothing before re-use.

Respiratory protection

Breathing apparatus only if aerosol or dust is formed.
Recommended Filter type: ABEK-filter

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	colourless

Odour:	odourless
pH-Value (at 20 °C):	12,3

Changes in the physical state

Melting point:	no data available
Initial boiling point and boiling range:	92 °C
Sublimation point:	not applicable
Softening point:	not applicable
Pour point:	not applicable
Flash point:	not applicable

Flammability

Solid:	not applicable
Gas:	not applicable

Explosive properties

not applicable

Lower explosion limits:	not applicable
Upper explosion limits:	not applicable
Ignition temperature:	not applicable

Auto-ignition temperature

Solid:	not applicable
Gas:	not applicable
Decomposition temperature:	not applicable

Oxidizing properties

not applicable

Vapour pressure:	no data available
Density (at 20 °C):	1,112 g/cm³
Bulk density:	not applicable
Water solubility: (at 20 °C)	completely soluble

Solubility in other solvents

soluble

Partition coefficient:	no data available
Viscosity / dynamic:	no data available
Viscosity / kinematic:	no data available
Flow time:	no data available
Vapour density:	no data available
Evaporation rate: (at 20 °C)	0,57
Solvent separation test:	no data available
Solvent content:	no data available

9.2. Other information

Solid content:	not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Hazard: Acids

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Reacts with the following substances: Acids

10.4. Conditions to avoid

Extremes of temperature and direct sunlight.

10.5. Incompatible materials

Acids, Oxidizing agents

10.6. Hazardous decomposition products

Contact with acids liberates toxic gas.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

H310 - Fatal in contact with skin.
Toxic by inhalation and if swallowed.

ATEmix calculated

ATE (oral) 66,7 mg/kg; ATE (dermal) 102,7 mg/kg; ATE (inhalation vapour) 6,67 mg/l; ATE (inhalation aerosol) 0,667 mg/l

CAS No	Chemical name					
	Exposure route	Dose		Species	Source	Method
143-33-9	Sodium cyanide					
	oral	LD50	4,8 mg/kg	rat		
	dermal	LD50	7,7 mg/kg	rabbit		
	inhalation (1 h) vapour	LC50	0,16 mg/l	rat		
	inhalation aerosol	ATE	0,05 mg/l			

Irritation and corrosivity

The product causes burns of eyes, skin and mucous membranes.

Sensitising effects

No sensitisation responses were observed.

Carcinogenic/mutagenic/toxic effects for reproduction

Contains no ingredient listed as a carcinogen

STOT-single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

No aspiration toxicity classification

Specific effects in experiment on an animal

No data is available on the product itself.

Further information

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1. Toxicity

No data is available on the product itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose		[h] | [d]	Species	Source	Method
143-33-9	Sodium cyanide						
	Acute fish toxicity	LC50 mg/l	0,083	96 h	Lepomis macrochirus (Bluegill sunfish)		
1310-73-2	sodium hydroxide; caustic soda						
	Acute fish toxicity	LC50 mg/l	45,4	96 h	Onchorhynchus mykiss		

12.2. Persistence and degradability

No data is available on the product itself.

12.3. Bioaccumulative potential

No data is available on the product itself.

12.4. Mobility in soil

no data available

12.5. Results of PBT and vPvB assessment

no data available

12.6. Other adverse effects

May cause long-term adverse effects in the aquatic environment.
Do not flush into surface water or sanitary sewer system.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

In accordance with local and national regulations.

List of Wastes Code - residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

List of Wastes Code - used product

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals; hazardous waste

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 2922

14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (Sodium hydroxide/sodium cyanide solution)

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8+6.1

Classification code: CT1

Special Provisions: 274

Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	86
Tunnel restriction code:	E

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

Not tested

Marine transport (IMDG)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Sodium hydroxide/sodium cyanide solution)
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1

Marine pollutant:	--
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number:	UN 2922
14.2. UN proper shipping name:	CORROSIVE LIQUID, TOXIC, N.O.S. (Sodium hydroxide/sodium cyanide solution)/IATA*/
14.3. Transport hazard class(es):	8
14.4. Packing group:	II
Hazard label:	8+6.1

Special Provisions:	A3 A803
Limited quantity Passenger:	0.5 L
Passenger LQ:	Y840
Excepted quantity:	E2
IATA-packing instructions - Passenger:	851
IATA-max. quantity - Passenger:	1 L
IATA-packing instructions - Cargo:	855
IATA-max. quantity - Cargo:	30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: Yes

Danger releasing substance: Sodium cyanide

14.6. Special precautions for user

Use personal protective equipment.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

Other applicable information

Additional Information:This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit, Hazard Class: 9, UN Number3316, Package group II, EMS Code: F-A, S-P These transport data apply to the entire pack

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3

National regulatory information

Employment restrictions:	Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.
Water hazard class (D):	3 - strongly hazardous to water

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes

Revision: 27.11.2017
Safety datasheet sections which have been updated: 2, 11
Revision: 17.08.2015
Safety datasheet sections which have been updated: 4
Revision: 27.05.2015
Safety datasheet sections which have been updated: 2, 11
Revision: 05.09.2013
Safety datasheet sections which have been updated: 4-16

Classification for mixtures and used evaluation method according to Regulation (EC) No. 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 2; H310	Calculation method
Acute Tox. 3; H301	Calculation method
Acute Tox. 3; H331	Calculation method
Skin Corr. 1B; H314	Calculation method
Eye Dam. 1; H318	Calculation method
Aquatic Chronic 1; H410	

Relevant H and EUH statements (number and full text)

H300	Fatal if swallowed.
H301	Toxic if swallowed.
H301+H331	Toxic if swallowed or if inhaled.
H310	Fatal in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H331	Toxic if inhaled.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)