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

1.1. Product identifier

14032-68 ZincoVer 5 Zinc Reagent

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. 3
Acute toxicity: Acute Tox. 4
Skin corrosion/irritation: Skin Irrit. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Reproductive toxicity: Repr. 1B
Specific target organ toxicity - single exposure: STOT SE 3
Hazardous to the aquatic environment: Aquatic Acute 1
Hazardous to the aquatic environment: Aquatic Chronic 1
Hazard Statements:
Toxic in contact with skin.
Harmful if swallowed.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May damage fertility. May damage the unborn child.
May cause respiratory irritation.
Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Potassium borate
diboron trioxide; boric oxide
Potassium cyanide

Signal word: Danger

Pictograms:

Hazard statements

H311	Toxic in contact with skin.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.
H335	May cause respiratory irritation.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P361	Take off immediately all contaminated clothing.
P391	Collect spillage.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Special labelling of certain mixtures

EUH032	Contact with acids liberates very toxic gas.

Additional advice on labelling

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

2.3. Other hazards

Toxic to Reproduction Category 2 Pregnant women or women of child-bearing age should not be exposed to this product. Harmful by inhalation, in contact with skin and if swallowed.
Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
1332-77-0	Potassium borate			50-60 %
	215-575-5			
	Repr. 1B, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3; H360FD H315 H319 H335			
134-03-2	(+)-Sodium L-ascorbate			20-30 %
	205-126-1			
1303-86-2	diboron trioxide; boric oxide			15-25 %
	215-125-8	005-008-00-8		
	Repr. 1B; H360FD			
151-50-8	Potassium cyanide			3-7 %
	205-792-3	006-007-00-5		
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Aquatic Acute 1 (M-Factor = 10), Aquatic Chronic 1 (M-Factor = 10); H310 H330 H300 H400 H410 EUH032			

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

Further Information

This product contains substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
diboron trioxide; boric oxide

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Take off contaminated clothing and shoes immediately.
Show this safety data sheet to the doctor in attendance.

After inhalation

Move to fresh air. Call a physician immediately.

After contact with skin

Wash off immediately with soap and plenty of water. Take off all contaminated clothing immediately. Call a physician immediately.

After contact with eyes

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

After ingestion

Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person.
Call a physician immediately. Show this safety data sheet to the doctor in attendance.

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

May cause skin irritation. May cause eye irritation.

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

Dry powder

Unsuitable extinguishing media

Carbon dioxide (CO_2)

5.2. Special hazards arising from the substance or mixture

Fire may liberate hazardous vapours.
In the event of fire the following can be released: Cyanides, Carbon dioxide (CO_2), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke.
Dust may form explosive mixture in air.

5.3. Advice for firefighters

In order to avoid contact with skin, keep a safety distance and wear suitable protective clothing.
In the event of fire, wear self-contained breathing apparatus.
In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.
Suppress (knock down) gases/vapours/mists with a water spray jet.

Additional information

Prevent fire extinguishing water from contaminating surface water or the ground water system. 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. Only qualified personnel equipped with suitable protective equipment may intervene. Immediately evacuate personnel to safe areas.
Do not breathe vapours, mist or gas.
Ensure adequate ventilation. Remove all sources of ignition.

Evacuate personnel to safe areas.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local/national regulations (see section 13).

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.
Avoid contact with skin and eyes.
Do not breathe vapours/dust.
Wash thoroughly after handling.

Advice on protection against fire and explosion

See also section 5 Observe label precautions.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep containers dry and tightly closed to avoid moisture absorption and contamination.

Hints on joint storage

Do not store near acids.

Further information on storage conditions

Keep locked up or in an area accessible only to qualified or authorised persons.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
1303-86-2	Diboron trioxide	-	10		TWA (8 h)	WEL
		-	20		STEL (15 min)	WEL
151-50-8	Potassium cyanide (as cyanide)	-	5		TWA (8 h)	WEL

Additional advice on limit values

None known.

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.
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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

Avoid contact with skin, eyes and clothing.

Respiratory protection

Avoid breathing dust or vapour.
Use with local exhaust ventilation.

Environmental exposure controls

Do not flush into surface water or sanitary sewer system.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	pink
Odour:	odourless
pH-Value (at 20 °C):	8,7

Changes in the physical state

Melting point:	155 °C
Initial boiling point and boiling range:	not applicable
Sublimation point:	no data available
Softening point:	no data available
Pour point:	not applicable
:	no data available
Flash point:	not applicable
Sustaining combustion:	No data available

Flammability

Solid:	not applicable
Gas:	not applicable

Explosive properties

no data available

Lower explosion limits:	no data available
Upper explosion limits:	no data available
Ignition temperature:	no data available

Auto-ignition temperature

Solid:	no data available
Gas:	no data available
Decomposition temperature:	no data available

Oxidizing properties

no data available

Vapour pressure:	no data available
Vapour pressure:	no data available
Density (at 20 °C):	1,83 g/cm³
Bulk density:	no data available
Water solubility:	soluble

Solubility in other solvents

Incompatible with acids.

Partition coefficient:	not applicable
Viscosity / dynamic:	not applicable
Viscosity / kinematic:	not applicable
Flow time:	not applicable
Vapour density:	not applicable
Evaporation rate:	not applicable
Solvent separation test:	not applicable
Solvent content:	not applicable

9.2. Other information

Solid content:	no data available

no data available

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

Product is sensitive to light and moisture.

10.5. Incompatible materials

None known.

10.6. Hazardous decomposition products

Thiocyanates can develop poisonous gas in contact with strong acids.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

LD50/oral/rat = 383 mg/kg (Information given is based on tests on the mixture itself.)

ATEmix calculated

ATE (oral) 166,7 mg/kg; ATE (dermal) 1110,0 mg/kg; ATE (inhalation vapour) 0,50 mg/l; ATE (inhalation aerosol) 1,667 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
1332-77-0	Potassium borate				
	oral	LD50 3690 mg/kg	ratte		
1303-86-2	diboron trioxide; boric oxide				
	oral	LD50 3163 mg/kg	Mice	GESTIS	
151-50-8	Potassium cyanide				
	oral	LD50 5 mg/kg	rat		
	dermal	LD50 14,29 mg/kg	rabbits	ECHA	
	inhalation (4 h) vapour	LC50 ,051 mg/l	rat		
	inhalation (4 h) aerosol	LC50 0,051 mg/l	rat		

Irritation and corrosivity

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

Carcinogenic/mutagenic/toxic effects for reproduction

H360 - May damage fertility or the unborn child.

STOT-single exposure

The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Specific effects in experiment on an animal

LD50/oral/rat = 383 mg/kg

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. Information given is based on data on the components and the ecotoxicology of similar products.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] | [d]	Species	Source	Method
1303-86-2	diboron trioxide; boric oxide					
	Acute crustacea toxicity	EC50 370 - 490 mg/l	48 h	Daphnia Magna	IUCLID	
151-50-8	Potassium cyanide					
	Acute fish toxicity	LC50 0,068 mg/l	96 h			
	Acute crustacea toxicity	EC50 0,25 mg/l	48 h			

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 is available on the product itself.

12.5. Results of PBT and vPvB assessment

No data is available on the product itself.

12.6. Other adverse effects

Environmental Effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

In accordance with local and national regulations.

Waste disposal number of waste from 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

Waste disposal number of 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

Waste disposal number of contaminated packaging

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

Contaminated packaging

Dispose of as unused product.

The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1588

14.2. UN proper shipping name: Cyanides, inorganic, solid, n.o.s. (Potassium cyanide mixture)

14.3. Transport hazard class(es): 6.1

14.4. Packing group: III

Hazard label: 6.1

Classification code: T5
Special Provisions: 47 274
Limited quantity: 5 kg
Excepted quantity: E1
Transport category: 2
Hazard No: 60
Tunnel restriction code: E

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

Not tested

Marine transport (IMDG)

14.1. UN number: UN 1588

14.2. UN proper shipping name: Cyanides, inorganic, solid, n.o.s. (Potassium Cyanide mixture)

14.3. Transport hazard class(es): 6.1

14.4. Packing group: III

Hazard label: 6.1

Marine pollutant: P
Special Provisions: 47, 223, 274
Limited quantity: 5 kg
Excepted quantity: E1
EmS: F-A, S-A

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 1588

14.2. UN proper shipping name: Cyanides, inorganic, solid, n.o.s. (Potassium Cyanide mixture)

14.3. Transport hazard class(es): 6.1

14.4. Packing group: III

Hazard label: 6.1

Special Provisions: A3 A13
Limited quantity Passenger: 10 kg
Passenger LQ: Y645
Excepted quantity: E1
IATA-packing instructions - Passenger: 670
IATA-max. quantity - Passenger: 100 kg
IATA-packing instructions - Cargo: 677
IATA-max. quantity - Cargo: 200 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: yes

Danger releasing substance: Potassium cyanide

14.6. Special precautions for user

no data available

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

SECTION 15: Regulatory information

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

EU regulatory information

Authorisations (REACH, annex XIV):

Substances of very high concern, SVHC (REACH, article 59):
diboron trioxide; boric oxide

Restrictions on use (REACH, annex XVII):

Entry 30: diboron trioxide; boric oxide

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils 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. Observe employment restrictions for women of child-bearing age.

Water contaminating class (D): 3 - highly water contaminating

15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes

Revision: 13.02.2017
Safety datasheet sections which have been updated: 2, 8, 10, 11
Revision: 1.02.2017
Safety datasheet sections which have been updated: 11
Revision: 18.07.2016
Safety datasheet sections which have been updated: 2.2
Revision: 11.04.2016
Safety datasheet sections which have been updated: 3
Revision: 28.04.2015
Safety datasheet sections which have been updated: 2, 11
Revision: 03.01.2014
Safety datasheet sections which have been updated: 2-16
Revision: 08.11.2012
Safety datasheet sections which have been updated: 1, 2, 3, 15

Relevant H and EUH statements (number and full text)

H300	Fatal if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.
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 present level of our knowledge. It does not, however, give assurances 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.)