



Be Right™

# SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

Issue Date 02-Jun-2009

Revision Date 05-Aug-2024

Version 3.2

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

**Product Code(s)** HPT240  
**Product Name** Chlordioxide Reagent

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

**Recommended Use** Determination of chlorine dioxide. Laboratory Use.

**Uses advised against** Consumer use

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

#### **Supplier**

HACH LANGE GmbH  
Willstätterstr. 11  
D-40549 Düsseldorf  
Tel: +49 (0)211 5288-383  
sds@hach.com

Responsible country contact:

HACH UK  
Laser House  
Ground Floor, Suite B  
Waterfront Quay, Salford Quays  
GB - Manchester, M50 3XW  
Tel. +44 (0) 161 872 1487  
info-uk@hach.com

HACH Ireland  
Unit 34 GB Business Park  
Little Island  
IRL-Co. Cork  
T45 H681  
Tel. +353 (0)146 02 522  
info-ie@hach.com

### 1.4. Emergency telephone number

UK: Chemtrec: +44 20 3807 3798  
IE: National Poisons Information Centre (NPIC) 01 809 2566 (24/7)

## Section 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

## 2.2. Label elements

Classification according to Regulation (EC) No. 1272/2008 [CLP]

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

## **Hazard statements**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

## 2.3. Other hazards

No information available.

### PBT & vPvB

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT)

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors.

## Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not applicable

### 3.2 Mixtures

Chemical name	CAS No. EC No. Index No.	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Boric acid (H3BO3)	10043-35-3 233-139-2 005-007-00-2	<1%	Repr. 1B - H360FD		-	-

### Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate

No information available

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Boric acid (H3BO3) 10043-35-3	2660 mg/kg	None reported	None reported	None reported	None reported

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No.	SVHC candidates
Boric acid (H3BO3)	10043-35-3	X

## Section 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	Remove to fresh air.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
<b>Skin contact</b>	Wash skin with soap and water. In the case of skin irritation or allergic reactions see a doctor.
<b>Ingestion</b>	Rinse mouth.
<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8). Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

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

**Symptoms** No information available.

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

**Note to doctors** 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.

**Unsuitable extinguishing media** No information available.

### 5.2. Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical** Thermal decomposition can lead to release of irritating and toxic gases and vapours.

**Hazardous combustion products** This material will not burn.

### 5.3. Advice for firefighters

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**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

**Personal precautions** Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Evacuate personnel to safe areas.

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

### 6.2. Environmental precautions

**Environmental precautions** Should not be released into the environment. See Section 12 for additional Ecological Information.

### 6.3. Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Take up mechanically, placing in appropriate containers for disposal.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

### 6.4. Reference to other sections

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## Section 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

**Advice on safe handling** Ensure adequate ventilation.

**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions** Accessible only for authorized persons.

### 7.3. Specific end use(s)

**Specific use(s)** Analytical reagent.

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

#### Exposure Limits

Chemical name	European Union	United Kingdom	Ireland

Boric acid (H3BO3) 10043-35-3	-	-	TWA: 2 mg/m <sup>3</sup> STEL: 6 mg/m <sup>3</sup>
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**Derived No Effect Level (DNEL)** No information available

**Predicted No Effect Concentration (PNEC)** No information available.

## 8.2. Exposure controls

### Engineering controls

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Personal protective equipment

#### Eye/face protection

Wear safety glasses with side shields (or goggles).

#### Hand protection

Barrier creams may help to protect the exposed areas of skin. Wear suitable gloves. Gloves must be inspected prior to use. The selected protective gloves have to satisfy the specifications of EU Directive 2016/425 and the standard EN 374-1:2016 derived from it. Chemical resistant gloves made of butyl rubber or nitrile rubber category III acco.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Short term	Wear protective nitrile rubber gloves	0,11 mm	>480 minutes
Long term (repeated)	Wear protective nitrile rubber gloves	0,11 mm	>480 minutes

### Skin and body protection

Avoid contact with eyes, skin and clothing. Wash contaminated clothing before reuse. Long sleeved clothing.

### Respiratory protection

Ensure adequate ventilation. No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. Wear breathing apparatus if exposed to vapours/dusts/aerosols.

### General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

**Physical state** Liquid

**Colour** red

**Odour** None

**Odour threshold** No data available

#### Property

#### Values

#### Remarks • Method

<b>Molecular weight</b>	No data available	
<b>pH</b>	9.2	@ 20 °C
<b>Melting point / freezing point</b>	No data available	
<b>Initial boiling point and boiling range</b>	~ 100 °C / 212 °F	
<b>Evaporation rate</b>	1 (water = 1)	
<b>Vapour pressure</b>	No data available	
<b>Relative vapor density</b>	No data available	
<b>Partition coefficient</b>	No data available	
<b>Soil Organic Carbon-Water Partition Coefficient</b>	No data available	
<b>Autoignition temperature</b>	No data available	
<b>Decomposition temperature</b>	No data available	
<b>Dynamic viscosity</b>	No data available	
<b>Kinematic viscosity</b>	No data available	
<b>Relative density</b>	1.002 g/mL	

**Solubility(ies)****Water solubility**

Water solubility classification	Water solubility	Water Solubility Temperature
Soluble	> 1000 mg/L	25 °C / 77 °F

**Solubility in other solvents**

Chemical Name	Solubility classification	Solubility	Solubility Temperature
None reported	No information available	No data available	No information available

**Metal Corrosivity**

<b>Steel Corrosion Rate</b>	No data available
<b>Aluminum Corrosion Rate</b>	No data available

**Explosive properties**

<b>Upper explosion limit</b>	No data available
<b>Lower explosion limit</b>	No data available

**Flammable properties**

<b>Flash point</b>	No data available
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**Flammability**

<b>Upper flammability limit:</b>	No data available
<b>Lower flammability limit</b>	No data available

**Oxidising properties**

No data available.

**Bulk density** No data available

## 9.2. Other information

No information available.

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

**Reactivity** No information available.

### 10.2. Chemical stability

**Stability** Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** None under normal processing.

**Hazardous polymerisation** None under normal processing.

### 10.4. Conditions to avoid

**Conditions to avoid** None known based on information supplied.

### 10.5. Incompatible materials

**Incompatible materials** None known based on information supplied.

### 10.6. Hazardous decomposition products

**Hazardous Decomposition Products** No information available.

## Section 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Based on available data, the classification criteria are not met

Mixture No data available.

Substance No data available.

#### Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium chloride	Rat LD <sub>50</sub>	2600 mg/kg	None reported	None reported	IUCLID
Boric acid (H3BO3)	Rat LD <sub>50</sub>	2660 mg/kg	None reported	None reported	IUCLID
Ethylenediaminetetraacetic acid	Rat LD <sub>50</sub>	4500 mg/kg	None reported	None reported	ECHA
Ammonium hydroxide	Rat	350 mg/kg	None reported	None reported	Vendor SDS

	LD <sub>50</sub>				
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**Acute Toxicity Estimate (ATE)** Not applicable

**Unknown acute toxicity**

0 % of the mixture consists of ingredient(s) of unknown toxicity.

**Skin corrosion/irritation**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Boric acid (H3BO3)	Draize Test	Rabbit	500 mg	24 hours	Not corrosive or irritating to skin	ECHA
Ethylenediaminetetra acetic acid	Draize Test	Rabbit	500 mg	20 hours	Not corrosive or irritating to skin	ECHA
Ammonium hydroxide	Existing human experience	Human	None reported	None reported	Corrosive to skin	HSDB

**Serious eye damage/eye irritation**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

Chemical name	Test method	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Boric acid (H3BO3)	Draize Test	Rabbit	100 mg	24 hours	Not corrosive or irritating to eyes	ECHA
Ethylenediaminetetra acetic acid	Draize Test	Rabbit	50 mg	None reported	Eye irritant	HSDB
Ammonium hydroxide	Draize Test	Rabbit	0.044 mg	None reported	Corrosive to eyes	RTECS

**Respiratory or skin sensitisation**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

**Skin Sensitization Exposure Route:**

Chemical name	Test method	Species	Results	Key literature references and sources for data
Boric acid (H3BO3)	OECD Test No. 406: Skin Sensitisation	Guinea pig	No sensitisation responses were observed.	ECHA



**STOT - single exposure**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

**Oral Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium chloride	Man LD <sub>Lo</sub>	20 mg/kg	None reported	None reported	RTECS
Boric acid (H <sub>3</sub> BO <sub>3</sub> )	Man LD <sub>Lo</sub>	429 mg/kg	None reported	<b>Kidney, Ureter, or Bladder</b> Changes in tubules (including acute renal failure, acute tubular necrosis)	RTECS
Ammonium hydroxide	Human LD <sub>Lo</sub>	43 mg/kg	None reported	None reported	RTECS

**Inhalation (Vapor) Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Ammonium hydroxide	Human TC <sub>Lo</sub>	408 mg/L	None reported	<b>Lungs, Thorax, or Respiration</b> Fibrosis, focal (pneumoconiosis) Acute pulmonary edema	RTECS

**STOT - repeated exposure**

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance Test data reported below.

**Oral Exposure Route:**

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium chloride	Rat TD <sub>Lo</sub>	75600 mg/kg	42 days	<b>Kidney, Ureter, or Bladder</b> Urine volume increased	RTECS
Boric acid (H <sub>3</sub> BO <sub>3</sub> )	Rat NOAEL	100 mg/kg	730 days	<b>Nutritional and Gross Metabolic</b> Weight gain Food intake	ECHA

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

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Boric acid (H <sub>3</sub> BO <sub>3</sub> )	Rat NOAEC	470 mg/m <sup>3</sup>	70 days	No toxicological effects observed	ECHA

**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

Mixture invitro **Data** No data available.

Substance invitro **Data** Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium chloride	Mutation in microorganisms	Mouse lymphocyte	2048 mmol/L	None reported	Positive test result for mutagenicity	RTECS
Boric acid (H3BO3)	Mutation in microorganisms	<i>Salmonella typhimurium</i>	2.5 mg/plate	None reported	Negative	ECHA
Ethylenediaminetetraacetic acid	Sister chromatid exchange	Hamster embryo	0.03 mmol/L	None reported	Positive test result for mutagenicity	RTECS
Ammonium hydroxide	Mutation in microorganisms	<i>Salmonella typhimurium</i>	10 mg/disc	None reported	Positive test result for mutagenicity	RTECS

Mixture invivo **Data** No data available.

Substance invivo **Data** Test data reported below.

#### Oral Exposure Route:

Chemical name	Test	Species	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium chloride	Unscheduled DNA synthesis	Rat	1.5 mg/kg	None reported	Positive test result for mutagenicity	RTECS
Boric acid (H3BO3)	Micronucleus test	Mouse	3500 mg/kg	2 days	Negative test result for mutagenicity	ECHA

#### Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture No data available.

Substance No data available.

#### Reproductive toxicity

Based on available data, the classification criteria are not met.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Boric acid (H3BO3)	Repr. 1B

Mixture No data available.

Substance Test data reported below.

#### Oral Exposure Route:

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Boric acid (H3BO3)	Rat TD <sub>Lo</sub>	52 mg/kg	26 weeks	<b>Paternal Effects</b> Spermatogenesis (including genetic material, sperm morphology, motility, and count)	RTECS

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

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Boric acid (H3BO3)	Human TC <sub>Lo</sub>	0.010 mg/L	10 years	<b>Paternal Effects</b> Epididymis Sperm duct Spermatogenesis (including genetic material, sperm morphology, motility, and count) testes	RTECS

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**11.2. Information on other hazards**

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

**11.2.1. Endocrine disrupting properties**

**Endocrine disrupting properties** This product does not contain any known or suspected endocrine disruptors.

**11.2.2. Other information**

**Other adverse effects** No information available.

**Section 12: ECOLOGICAL INFORMATION****12.1. Toxicity****Ecotoxicity**

Based on available data, the classification criteria are not met.

**Unknown aquatic toxicity**

Contains 0 % of components with unknown hazards to the aquatic environment.

**Mixture****Acute aquatic toxicity:**

No data available.

**Aquatic Chronic Toxicity:**

No data available.

**Substance****Acute aquatic toxicity:**

Test data reported below.

Fish:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium chloride	96 hours	<i>Pimephales promelas</i>	LC <sub>50</sub>	880 mg/L	IUCLID
Ethylenediaminetetraacetic acid	96 hours	<i>Lepomis macrochirus</i>	LC <sub>50</sub>	41 mg/L	IUCLID
Ammonium hydroxide	96 hours	<i>Oncorhynchus kisutch</i>	LC <sub>50</sub>	0.45 mg/L	PEEN

Crustacea:

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Ammonium hydroxide	48 Hours	<i>Daphnia magna</i>	LC <sub>50</sub>	0.66 mg/L	PEEN

**Aquatic Chronic Toxicity:**

No data available.

**12.2. Persistence and degradability**

**Mixture** No data available.

**12.3. Bioaccumulative potential**

**Mixture:** No data available.

**Partition coefficient** No data available

**12.4. Mobility in soil**

**Soil Organic Carbon-Water Partition Coefficient** No data available

**12.5. Results of PBT and vPvB assessment**

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

Chemical name	PBT and vPvB assessment
Boric acid (H3BO3)	The substance is not PBT / vPvB

**12.6. Endocrine disrupting properties**

**Endocrine Disruptor Information:** This product does not contain any known or suspected endocrine disruptors

**12.7. Other adverse effects**

No information available.

Ozone: Not applicable

**Ozone depletion potential (ODP):** No information available

## Section 13: DISPOSAL CONSIDERATIONS

**13.1. Waste treatment methods****Advice on Disposal**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Waste disposal number (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 (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.

**Contaminated packaging** Dispose of contents/containers in accordance with local regulations.

**Other Information** Do not reuse empty containers.

## Section 14: TRANSPORT INFORMATION

### ADR

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user Special Provisions	None

### IATA

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user Special Provisions	None

### IMDG

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing Group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	No information available

### **Additional information**

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.

## Section 15: REGULATORY INFORMATION

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

#### National regulations

#### European Union

#### **Authorisations and/or restrictions on use:**

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Boric acid (H3BO3) - 10043-35-3	Use restricted. See entry 30. Use restricted. See entry 75.	

**Persistent Organic Pollutants** Not applicable

**Dangerous substance category per Seveso Directive (2012/18/EU)**

- Non-controlled

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not applicable

**Germany****Water hazard class (WGK)** slightly hazardous to water (WGK 1)**France****Occupational Illnesses (R-463-3, France)**

Chemical name	French RG number	Title
Boric acid (H3BO3) 10043-35-3	RG 5, RG 14, RG 15, RG 15bis, RG 20bis RG 20, RG 20bis, RG 26, RG 34, RG 65	-

**International Inventories**

<b>EINECS/ELINCS</b>	Complies
<b>TSCA</b>	Complies
<b>DSL/NDSL</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>KECL</b>	Complies
<b>PICCS</b>	Complies
<b>AICS</b>	Complies

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**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**AICS** - Australian Inventory of Chemical Substances**15.2. Chemical safety assessment****Chemical Safety Report** Chemical safety assessments for substances in this mixture were not carried out.**Section 16: OTHER INFORMATION****Issue Date** 02-Jun-2009**Revision Date** 05-Aug-2024

<b>Revision Note</b>	updated SDS sections:
	3
	9
	11
	12

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

#### Legend

**	Hazard Designation
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieure
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service Number
Ceiling	Maximum limit value
CLP	Classification, Labelling and Packaging of substances and mixtures [Regulation (EC) No. 1272/2008]
DNEL	Derived No Effect Level (DNEL)
EC	European Community
ECHA	ECHA (The European Chemicals Agency)
EC50	Effective Concentration to 50% of a test population
EEC	European Economic Community
EN	European Standard
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
IATA-DGR	International Air Transport Association - Dangerous Goods Regulations
ICAO	International Civil Aviation Organization
ICAO-TI	International Civil Aviation Organization - Technical Instructions
IUCLID	IUCLID (The International Uniform Chemical Information Database)
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LOAEL	Lowest observed adverse effect level
LOAEC	Lowest observed adverse effect concentration
LC50	Lethal Concentration to 50% of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
LOLI	LOLI (List of Lists - An International Chemical Regulatory Database)
MAK	Maximale Arbeitsplatz-Konzentration, a German expression corresponding to threshold limit value, which relates to safe daily exposure levels to chemical substances
NOAEL	NOAEL (No observed adverse effect level)
NOAEC	No observed adverse effect concentration
OSHA	OSHA (Occupational Safety and Health Administration of the US Department of Labour)
PEC	Predicted Effect Concentration
PNEC	Predicted No Effect Concentration (PNEC)
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals [Regulation (EC) No. 1907/2006]
RTECS	RTECS (Registry of Toxic Effects of Chemical Substances)
TWA	TWA (time-weighted average)
SKN*	Skin designation
SKN+	Skin sensitisation
STEL	STEL (Short Term Exposure Limit)
STOT	Specific Target Organ Toxicity
STOT RE	Specific target organ toxicity — repeated exposure
STOT SE	Specific target organ toxicity — single exposure
SVHC	Substances of Very High Concern
TLV	Threshold Limit Value
TRGS	Technical rules for hazardous substances, Germany

TSCA	Toxic Substances Control Act
UN	United Nations
vPvB	very persistent and very bioaccumulative
VOC	Volatile organic compounds
AwSV	Administrative regulation of water polluting substances, Germany

**Key literature references and sources for data**

See Section 11: TOXICOLOGICAL INFORMATION

See Section 12: ECOLOGICAL INFORMATION

**Classification procedure**

<b>Classification according to Regulation (EC) No. 1272/2008 [CLP]</b>	<b>Method Used</b>
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration toxicity	Calculation method
Ozone	Calculation method

**Training Advice** Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

**Prepared By** Hach Product Compliance Department

**Restrictions on use** For Laboratory Use Only.

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**End of Safety Data Sheet**