Safety Data Sheet
according to GHS

Trade name :	Periomat Intra Developer concentrate		
Revision :	27.06.2019	**Version :**	1.0.0
Print date :	27.06.2019		

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

1.1 Product identifier
Periomat Intra Developer concentrate

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses
Special X-ray set for Dürr developers.

Product Categories [PC]

PC30 - PC 30 - Photo-chemicals

Uses advised against
None, if handled according to order.

Remark
The product is intended for professional use.

1.3 Details of the supplier of the safety data sheet
Supplier (manufacturer/importer/only representative/downstream user/distributor)
orochemie GmbH + Co. KG

Street : Max-Planck-Straße 27

Postal code/city : 70806 Kornwestheim

Telephone : +49 7154 1308-0

Telefax : +49 7154 1308-40

Information contact : DÜRR DENTAL SE, Höpfigheimer Str. 17, 74321 Bietigheim-Bissingen, Germany
Tel: +49 7142 705-0, Fax: +49 7142 705-500, info@duerrdental.com
in Australia:
DÜRR DENTAL SE, PO Box 2067, Woonona East New South Wales 2517, Australia,
Louis Manera +61 (0)412 95 95 25
Importer/Distributor:
Ivoclar Vivadent Ltd, PO Box 303011, North Harbour, Auckland, 0751.
Phone +64 9 914 9999 Fax+64 9 914 9990

1.4 Emergency telephone number
NZ: National Poison Centre (New Zealand) 0800 764 766 Poisons Hotline (24 hours/7days)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to GHS
Aquatic Acute 1 ; H400 - Hazardous to the aquatic environment : Acute 1 ; Very toxic to aquatic life.
Carc. 2 ; H351 - Carcinogenicity : Category 2 ; Suspected of causing cancer.
Eye Dam. 1 ; H318 - Serious eye damage/eye irritation : Category 1 ; Causes serious eye damage.
Skin Irrit. 2 ; H315 - Skin corrosion/irritation : Category 2 ; Causes skin irritation.
Muta. 2 ; H341 - Germ cell mutagenicity : Category 2 ; Suspected of causing genetic defects.
Skin Sens. 1 ; H317 - Skin sensitisation : Category 1 ; May cause an allergic skin reaction.

Classification procedure

The classification was carried out according to the calculation method of GHS.

2.2 Label elements
Labelling according to GHS
Hazard pictograms

Health hazard (GHS08) · Corrosion (GHS05) · Environment (GHS09) · Exclamation mark (GHS07)

Signal word

Danger

Hazard components for labelling

1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9

Hazard statements

H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.

Precautionary statements

P262	Do not get in eyes, on skin, or on clothing.
P280	Wear protective gloves and eye/face protection.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container to hazardous or special waste collection point.

2.3 Other hazards

None

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description

Periomat Intra Developer concentrate contains hydroquinone, potassium sulfite, potassium hydroxide, complexing agents, stabilizers and auxiliary agents in aqueous solution.

Hazardous ingredients

1,4-DIHYDROXYBENZENE ; REACH registration No. : 01-2119524016-51 ; EC No. : 204-617-8; CAS No. : 123-31-9

Weight fraction :	≥ 2,5 - < 3 %
Classification :	Muta. 2 ; H341 Carc. 2 ; H351 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Skin Sens. 1 ; H317 Aquatic Acute 1 ; H400 Aquatic Chronic 1 ; H410

2,2` -OXYBISETHANOL ; REACH registration No. : 01-2119457857-21 ; EC No. : 203-872-2; CAS No. : 111-46-6

Weight fraction :	≥ 1 - < 5 %
Classification:	STOT RE 2 ; H373 Acute Tox. 4 ; H302

BORIC ACID ; REACH registration No. : 01-2119486683-25 ; EC No. : 233-139-2; CAS No. : 10043-35-3

Weight fraction :	≥ 1 - < 2 %
Classification:	Repr. 1B ; H360FD

POTASSIUM HYDROXIDE ; REACH registration No. : 01-2119487136-33 ; EC No. : 215-181-3; CAS No. : 1310-58-3

Weight fraction :	≥ 1 - < 2 %
Classification:	Met. Corr. 1 ; H290 Skin Corr. 1A ; H314 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302

4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; REACH registration No. : - ; EC No. : 235-920-3; CAS No. : 13047-13-7

Weight fraction :	≥ 0,1 - < 0,5 %
Classification:	Acute Tox. 4 ; H302 Skin Sens. 1 ; H317 Aquatic Chronic 2 ; H411

Additional information

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Remove contaminated, saturated clothing immediately. When in doubt or if symptoms are observed, get medical advice.

Following inhalation

Provide fresh air. In case of respiratory tract irritation, consult a physician.

In case of skin contact

Wash with plenty of water. In case of skin irritation, consult a physician.

After eye contact

Remove contact lenses, keep eyelids open. In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

If swallowed, immediately drink: Water Never give anything by mouth to an unconscious person or a person with cramps. Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Suspected of causing genetic defects. Suspected of causing cancer. Causes serious eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Extinguishing powder Water spray Water mist The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

Full water jet

5.2 Special hazards arising from the substance or mixture

None known.

Hazardous combustion products

Carbon monoxide

5.3 Advice for firefighters

Adapt protective equipment to surrounding fire. Do not allow run-off from fire-fighting to enter drains or water courses.

Special protective equipment for firefighters

Adapt protective equipment to surrounding fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protection equipment. See protective measures under point 7 and 8.

For non-emergency personnel

Use personal protection equipment. See protective measures under point 7 and 8.

For emergency responders

Personal protection equipment

See protective measures under point 7 and 8.

6.2 Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

6.3 Methods and material for containment and cleaning up

For cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

Other information

Treat the recovered material as prescribed in the section on waste disposal.

6.4 Reference to other sections

None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Keep/Store only in original container. Please note safety instructions and directions for use on the drum. Handle and open container with care. Provide adequate ventilation. Do not breathe vapour/aerosol.

Protective measures

Measures to prevent fire

Usual measures for fire prevention. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep/Store only in original container. Keep container tightly closed. Keep in a cool, well-ventilated place. Do not store in temperatures below 5 °C.

Hints on joint storage

Store the foodstuffs separately.

7.3 Specific end use(s)

Observe instructions for use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values

2,2` -OXYBISETHANOL ; CAS No. : 111-46-6

Limit value type (country of origin) :	TLV/TWA (NZ)
Limit value :	23 ppm / 101 mg/m^3

POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3

Limit value type (country of origin) :	TLV/STEL (NZ)
Limit value :	2 mg/m^3
Remark :	ceiling limit value

DNEL/DMEL and PNEC values

There are no data available on the preparation itself.

DNEL/DMEL

Limit value type :	DNEL Consumer (local) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	0,5 mg/m^3
Limit value type :	DNEL Consumer (systemic) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	64 mg/kg
Safety factor :	24 h

Limit value type :	DNEL Consumer (systemic) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	1,74 mg/m³
Limit value type :	DNEL worker (systemic) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	128 mg/kg
Safety factor :	24 h
Limit value type :	DNEL worker (systemic) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	7 mg/m³
Limit value type :	DNEL worker (systemic) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	1 mg/m³
Limit value type :	DNEL Consumer (local) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	12 mg/m³
Limit value type :	DNEL Consumer (local) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Inhalation
Exposure frequency :	Short-term (acute)
Limit value :	12 mg/m³
Limit value type :	DNEL Consumer (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	53 mg/kg
Limit value type :	DNEL Consumer (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	21 mg/kg
Safety factor :	24 h
Limit value type :	DNEL Consumer (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	12 mg/m³
Limit value type :	DNEL worker (local) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	60 mg/m³
Limit value type :	DNEL worker (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	106 mg/kg
Limit value type :	DNEL worker (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	60 mg/m³
Limit value type :	DNEL worker (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	43 mg/kg
Safety factor :	24 h
Limit value type :	DNEL worker (systemic) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)

Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	44 mg/m³
Limit value type :	DNEL Consumer (systemic) (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Oral
Exposure frequency :	Short-term (acute)
Limit value :	0,98 mg/kg
Safety factor :	24 h
Limit value type :	DNEL Consumer (systemic) (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Oral
Exposure frequency :	Long-term (repeated)
Limit value :	0,98 mg/kg
Safety factor :	24 h
Limit value type :	DNEL Consumer (systemic) (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	0,98 mg/kg
Limit value type :	DNEL Consumer (systemic) (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	4,15 mg/m³
Limit value type :	DNEL worker (systemic) (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Dermal
Exposure frequency :	Long-term (repeated)
Limit value :	3924800 mg/kg
Limit value type :	DNEL worker (systemic) (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term (repeated)
Limit value :	8,3 mg/m³
Limit value type :	DNEL Consumer (local) (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	1 mg/m³
Limit value type :	DNEL worker (local) (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Inhalation
Exposure frequency :	Long-term
Limit value :	1 mg/m³

PNEC

Limit value type :	PNEC (Aquatic, freshwater) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Limit value :	0,00011 mg/l
Limit value type :	PNEC (Aquatic, marine water) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Limit value :	0,00001 mg/l
Limit value type :	PNEC (Industrial) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Soil
Limit value :	0,00012 mg/kg
Limit value type :	PNEC (Sediment, freshwater) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Limit value :	0,00098 mg/kg
Limit value type :	PNEC (Sediment, marine water) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Limit value :	0,00009 mg/kg
Limit value type :	PNEC (Sewage treatment plant) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Limit value :	0,71 mg/l
Limit value type :	PNEC (Aquatic, freshwater) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Limit value :	10 mg/l
Limit value type :	PNEC (Aquatic, marine water) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Limit value :	1 mg/l
Limit value type :	PNEC (Industrial) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)

Exposure route :	Soil
Limit value :	1,53 mg/kg
Limit value type :	PNEC (Sediment, freshwater) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Limit value :	20,9 mg/kg
Limit value type :	PNEC (Sediment, marine water) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Limit value :	2,09 mg/kg
Limit value type :	PNEC (Sewage treatment plant) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Limit value :	199,5 mg/l
Limit value type :	PNEC (Aquatic, freshwater) (BORIC ACID ; CAS No. : 10043-35-3)
Limit value :	1,35 mg/l
Limit value type :	PNEC (Aquatic, marine water) (BORIC ACID ; CAS No. : 10043-35-3)
Limit value :	1,35 mg/l
Limit value type :	PNEC (Sediment, freshwater) (BORIC ACID ; CAS No. : 10043-35-3)
Limit value :	1,8 mg/kg
Limit value type :	PNEC (Sediment, marine water) (BORIC ACID ; CAS No. : 10043-35-3)
Limit value :	1,8 mg/kg
Limit value type :	PNEC (Sewage treatment plant) (BORIC ACID ; CAS No. : 10043-35-3)
Limit value :	1,75 mg/l

8.2 Exposure controls

Personal protection equipment

Eye/face protection

Eye glasses with side protection DIN EN 166
Use tightly fitting safety glasses as per Australian Standard AS 1336 and AS/NZS 1337. Safety glasses with side shields

Skin protection

Hand protection

Short-term exposure (Level 2: < 30 min): disposable gloves to EN374 category III, e.g. nitrile rubber, material thickness 0.1 mm.
Long-term exposure (Level 6: < 480 min): protective gloves to EN374 category III, e.g. nitrile rubber, material thickness 0.7 mm.
When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. Wear impervious rubber gloves (AS2161).

Body protection

Body protection: not required.

Respiratory protection

Usually no personal respirative protection necessary.

General health and safety measures

Keep away from food, drink and animal feedingstuffs. Avoid contact with skin, eyes and clothes. Remove contaminated, saturated clothing. Wash hands before breaks and after work. Separate storage of work clothes. When using do not eat, drink, smoke, sniff.

Occupational exposure controls

Technical measures to prevent exposure

No particular measures required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Liquid
Colour : light yellow
Odour : characteristic

Safety relevant basis data

Melting point/melting range :	(1013 hPa)	No data available

Initial boiling point and boiling range :	(1013 hPa)	approx.	100	°C	
Decomposition temperature :	(1013 hPa)		No data available		
Flash point :			not applicable		
Ignition temperature :			not applicable		
Lower explosion limit :			not applicable		
Upper explosion limit :			not applicable		
Vapour pressure :	(50 °C)		No data available		
Density :	(20 °C)		1 - 1,2	g/cm^3	
Solvent separation test :	(20 °C)	<	3	%	
Water solubility :	(20 °C)		100	Wt %	
pH value :			10,2 - 11		
log P O/W :			No data available		
Flow time :	(20 °C)	<	12	s	DIN-cup 4 mm
Odour threshold :			No data available		
Maximum VOC content (EC) :			2,6	Wt %	
Oxidising liquids :	Not applicable.				
Explosive properties :	Not applicable.				
Corrosive to metals :	Not corrosive to metals.				

9.2 Other information

None

SECTION 10: Stability and reactivity

10.1 Reactivity

None, if handled according to order.

10.2 Chemical stability

Stable under recommended storage and handling conditions (see section 7).

10.3 Possibility of hazardous reactions

No information available.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

No information available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

There are no data available on the mixture itself.

Acute effects

Acute oral toxicity

Parameter :	ATEmix calculated
Exposure route :	Oral
Effective dose :	7368 mg/kg
Parameter :	LD50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Exposure route :	Oral
Species :	Rat
Effective dose :	1300 mg/kg
Parameter :	LD50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Oral

Species :	Rat
Effective dose :	365 mg/kg
Parameter :	LD50 (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Oral
Species :	Rat
Effective dose :	> 375 mg/kg
Parameter :	LD50 (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Oral
Species :	Rat
Effective dose :	3500 - 4100 mg/kg
Parameter :	LD50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Oral
Species :	Practical experience/human evidence
Effective dose :	1120 mg/kg
Parameter :	LD50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Oral
Species :	Rat
Effective dose :	12565 mg/kg
Parameter :	LD50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Oral
Species :	Rabbit
Effective dose :	4400 mg/kg
Parameter :	LD50 (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Oral
Species :	Mouse
Effective dose :	3450 mg/kg
Parameter :	LD50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Exposure route :	Oral
Species :	Rat
Effective dose :	566 mg/kg
Parameter :	LD50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Oral
Species :	Rat
Effective dose :	273 mg/kg
Parameter :	ATE (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Oral
Effective dose :	500 mg/kg
Parameter :	ATE (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Oral
Effective dose :	500 mg/kg
Parameter :	ATE (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Exposure route :	Oral
Effective dose :	500 mg/kg
Parameter :	ATE (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Exposure route :	Oral
Effective dose :	500 mg/kg

Practical experience/human evidence

The product has an irritating effect on eyes and skin. May cause sensitisation especially in sensitive humans. Limited evidence of a carcinogenic effect.

Acute dermal toxicity

Parameter :	ATEmix calculated
Exposure route :	Dermal
Effective dose :	not relevant
Parameter :	LD50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)

Exposure route :	Dermal
Species :	Rabbit
Effective dose :	13300 mg/kg
Parameter :	LD50 (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Dermal
Species :	Rabbit
Effective dose :	> 2000 mg/kg
Parameter :	LD50 (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Dermal
Species :	Rabbit
Effective dose :	> 2000 mg/kg

Acute inhalation toxicity

Parameter :	ATEmix calculated
Exposure route :	Inhalation (vapour)
Effective dose :	not relevant
Parameter :	LC50 (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Inhalation
Species :	Rat
Effective dose :	> 2 mg/l
Exposure time :	4 h
Parameter :	LC0 (BORIC ACID ; CAS No. : 10043-35-3)
Exposure route :	Inhalation
Species :	Rat
Effective dose :	28 mg/l
Exposure time :	4 h
Parameter :	LC0 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Exposure route :	Inhalation
Species :	Rat
Effective dose :	> 4,6 mg/l
Exposure time :	4 h

Irritant and corrosive effects

Eye contact: irritation. Causes skin irritation.

Sensitisation

May cause an allergic skin reaction.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Carcinogenicity

Parameter :	Carcinogenicity (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Exposure route :	Oral
Species :	Rat
Effective dose :	> 100 mg/kg
Exposure time :	25 month

Limited evidence of a carcinogenic effect.

Germ cell mutagenicity

Possible risk of irreversible effects. Suspected of causing genetic defects.

11.5 Additional information

The classification was carried out according to the calculation method of GHS.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

There are no data available on the preparation itself.

Acute (short-term) fish toxicity

Parameter :	LC50 (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Species :	Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	0,638 mg/l
Exposure time :	96 h
Parameter :	LC50 (BORIC ACID ; CAS No. : 10043-35-3)
Species :	Oncorhynchus mykiss (Rainbow trout)
Effective dose :	150 mg/l
Exposure time :	576 h
Parameter :	LC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species :	Pimephales promelas (fathead minnow)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	75200 mg/l
Exposure time :	96 h
Parameter :	LC50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Species :	Gambusia affinis (Mosquito fish)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	80 mg/l
Exposure time :	96 h
Parameter :	LC50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Species :	Pimephales promelas (fathead minnow)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	1 - 10 mg/l
Parameter :	LC50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Species :	Leuciscus idus (golden orfe)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	35 mg/l
Exposure time :	48 h
Parameter :	LC50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Species :	Poecilia reticulata (Guppy)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	165 mg/l
Exposure time :	24 h
Parameter :	LC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species :	Carassius auratus (goldfish)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	> 5000 mg/l
Exposure time :	24 h
Parameter :	LC50 (BORIC ACID ; CAS No. : 10043-35-3)
Species :	Oncorhynchus mykiss (Rainbow trout)
Effective dose :	100 mg/l
Exposure time :	768 h
Parameter :	LC50 (BORIC ACID ; CAS No. : 10043-35-3)
Species :	Pimephales promelas (fathead minnow)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	456 mg/l
Exposure time :	96 h
Parameter :	LC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species :	Gambusia affinis (Mosquito fish)
Evaluation parameter :	Acute (short-term) fish toxicity
Effective dose :	> 100 mg/l
Exposure time :	96 h
Parameter :	LC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species :	Leuciscus idus (golden orfe)

Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : > 10000 mg/l
Exposure time : 96 h
Parameter : LC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species : Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : > 1000 mg/l
Exposure time : 96 h

Acute (short-term) daphnia toxicity

Parameter : EC50 (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 0,138 mg/l
Exposure time : 48 h
Parameter : EC50 (BORIC ACID ; CAS No. : 10043-35-3)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 133 mg/l
Exposure time : 48 h
Parameter : EC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : > 10000 mg/l
Exposure time : 24 h
Parameter : EC50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 7,1 mg/l
Exposure time : 24 h
Parameter : EC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species : Daphnia magna (Big water flea)
Effective dose : 48900 mg/l
Exposure time : 48 h
Parameter : EC50 (BORIC ACID ; CAS No. : 10043-35-3)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 760 mg/l
Exposure time : 48 h

Chronic (long-term) daphnia toxicity

Parameter : NOEC (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Chronic (long-term) daphnia toxicity
Effective dose : 0,0057 mg/l
Exposure time : 504 h

Acute (short-term) algae toxicity

Parameter : EC50 (BORIC ACID ; CAS No. : 10043-35-3)
Species : Pseudokirchneriella subcapitata
Evaluation parameter : Acute (short-term) algae toxicity
Effective dose : 229 mg/l
Exposure time : 72 h
Parameter : EC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species : Selenastrum capricornutum
Evaluation parameter : Inhibition of growth rate
Effective dose : > 100 mg/l
Parameter : ErC50 (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)

Species :	Pseudokirchneriella subcapitata
Evaluation parameter :	Acute (short-term) algae toxicity
Effective dose :	0,33 mg/l
Exposure time :	72 h

Chronic (long-term) algae toxicity

Parameter :	NOEC (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Species :	Pseudokirchneriella subcapitata
Evaluation parameter :	Chronic (long-term) algae toxicity
Effective dose :	0,019 mg/l
Exposure time :	72 h
Parameter :	NOEC (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species :	Scenedesmus quadricauda
Evaluation parameter :	Chronic (long-term) algae toxicity
Effective dose :	2700 mg/l
Exposure time :	192 h

Bacteria toxicity

Parameter :	EC50 (POTASSIUM HYDROXIDE ; CAS No. : 1310-58-3)
Evaluation parameter :	Bacteria toxicity
Effective dose :	22 mg/l
Exposure time :	15 min
Parameter :	EC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Evaluation parameter :	Bacteria toxicity
Effective dose :	> 1000 mg/l
Exposure time :	3 h
Parameter :	EC50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Species :	Pseudomonas putida
Evaluation parameter :	Bacteria toxicity
Effective dose :	480 mg/l
Exposure time :	16 h
Parameter :	EC10 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Species :	Pseudomonas putida
Evaluation parameter :	Bacteria toxicity
Effective dose :	8000 mg/l
Exposure time :	16 h

12.2 Persistence and degradability

Abiotic degradation

No data available.

Biodegradation

Parameter :	DOC reduction (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Inoculum :	Degree of elimination
Evaluation parameter :	Biodegradation
Effective dose :	> 70 %
Exposure time :	672 h

No data available.

12.3 Bioaccumulative potential

No information available.

12.4 Mobility in soil

Known or predicted distribution to environmental compartments

There are no data available on the preparation itself.

Adsorption/Desorption

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

No information available.

12.7 Additional ecotoxicological information

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product/Packaging disposal

Waste codes/waste designations according to EWC/AVV

Waste code product

Concentrate/larger quantities: 09 01 01* water based developer baths.

Waste treatment options

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself. Waste codes 15 01 10* Contact a specialist disposal company or the local waste regulator for advice. This should be done in accordance with 'The Hazardous Waste Act'. Can be eliminated with domestic garbage on condition it complies with local regulations.

SECTION 14: Transport information

14.1 UN number

UN 3082

14.2 UN proper shipping name

Land transport (ADR/RID/ADG)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,4-DIHYDROXYBENZENE)

Sea transport (IMDG)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,4-DIHYDROXYBENZENE)

Air transport (ICAO-TI / IATA-DGR)

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,4-DIHYDROXYBENZENE)

14.3 Transport hazard class(es)

Land transport (ADR/RID)

Class(es) :	9
Classification code :	M6
Hazard identification number (Kemler No.) :	90
Tunnel restriction code :	E
Special provisions :	LQ 5 l · E 1
Hazard label(s) :	9 / N

Sea transport (IMDG)

Class(es) :	9
EmS-No. :	F-A / S-F
Special provisions :	LQ 5 l · E 1
Hazard label(s) :	9 / N

Air transport (ICAO-TI / IATA-DGR)

Class(es) :	9
Special provisions :	E 1
Hazard label(s) :	9 / N

14.4 Packing group

III

14.5 Environmental hazards

Land transport (ADR/RID) : Yes (P)
Sea transport (IMDG) : Yes (P)
Air transport (ICAO-TI / IATA-DGR) : Yes

14.6 Special precautions for user

None

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

not applicable

SECTION 15: Regulatory information

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

National regulations

EPA NZ Classes of hazardous properties class 8—corrosive substance, class 6 – substances toxic to people, class 9 – substances toxic to the environment
NZ HSNO Approval: HSR002995: Boric acid, HSNO Approval: HSR002709: 2,2`-Oxybisethanol, HSNO Approval: HSR003003: 1,4-Dihydroxybenzene, HSNO Approval: HSR001586: Potassium hydroxide

Restrictions of occupation

According to directive 94/33/EC, juveniles are only allowed to handle this product as long as all effects of dangerous substances are prevented. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

15.2 Chemical safety assessment

For this mixture a chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1 Indication of changes

None

16.2 Abbreviations and acronyms

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimates
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CMR = Carcinogen, Mutagen or Reproductive toxicant
CO_2 = Carbon dioxide
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EC = European Commission
EC50 = Half maximal effective concentration
EN = European Standard (Norm)
EU = European Union
EUH statement = CLP-specific Hazard statement
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
H statement = GHS Hazard statement
IATA = International Air Transport Association ICAO-TI = International Civil Aviation Organization-Technical Instructions
IMDG = International Maritime Dangerous Goods
LC50 = Median lethal concentration
LD50 = Median lethal dose
LogPow = Logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOEC/NOEL = No observed effect concentration/level
OECD = Organisation for Economic Co-operation and Development

PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RMM = Risk Management Measure
RRN = REACH Registration Number
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
SVHC = Substances of Very High Concern
TLV/STEL = Threshold limit value/short-term exposure limit
TLV/TWA = Threshold limit value/time weighted average
UN = United Nations
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

16.3 Key literature references and sources for data

Standard EN420:2003 General requirements for protective gloves: disposable gloves, e.g. nitrile rubber, material thickness 0.1 mm (Australian Standard 2161).
Long-term exposure (Level 6: < 480 min): protective gloves, e.g. nitrile rubber, material thickness 0.7 mm (Australian Standard 2161).
Personal eye protection - Eye and face protectors for occupational applications: safety glasses (Australian Standard AS 1336 and AS/NZS 1337.1:2010).

16.4 Classification for mixtures and used evaluation method according to GHS

The classification was carried out according to the calculation method of GHS.

16.5 Relevant H- and EUH-phrases (Number and full text)

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

16.6 Training advice

Do not handle until all safety precautions have been read and understood.

16.7 Additional information

Notice the directions for use on the label.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.