

Safety Data Sheet

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

Trade name : Automat XR Developer concentrate
Revision : 02.01.2018
Print date : 02.01.2018

Version (Revision) : 3.0.1 (3.0.0)

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

1.1 Product identifier

Automat XR 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 - 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 Great Britain/Ireland:

DÜRR DENTAL [Products] UK Ltd., 14 Linnell Way - Telford Way Industrial Estate, Kettering Northants NN16 8PS, United Kingdom

Tel: +44 1536 526740, Fax.: +44 1536 526749, info@duerruk.com

1.4 Emergency telephone number

INT: +49 6132 84463 (24 h/7 d)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

Aquatic Acute 1 ; H400 - Hazardous to the aquatic environment : Category 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 Regulation No. (EC) 1272/2008 [CLP].

2.2 Label elements

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

Hazard pictograms

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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

Dürr Automat XR Developer concentrate contains hydroquinone, potassium carbonate, potassium sulphite, potassium hydroxide, complexing agents, stabilizers and auxiliary agents in aqueous solution.

Hazardous ingredients

POTASSIUM CARBONATE ; REACH registration No. : 01-2119532646-36 ; EC No. : 209-529-3; CAS No. : 584-08-7

Weight fraction : $\geq 5 - < 10$ %

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H302 Skin Irrit. 2 ; H315 Eye Irrit. 2 ; H319 STOT SE 3 ; H335

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

Weight fraction : $\geq 5 - < 10$ %

Classification 1272/2008 [CLP] : Muta. 2 ; H341 Carc. 2 ; H351 Eye Dam. 1 ; H318 Acute Tox. 4 ; H302 Skin Sens. 1 ; H317 Aquatic Acute 1 ; H400

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

Weight fraction : $\geq 1 - < 5$ %

Classification 1272/2008 [CLP] : STOT RE 2 ; H373 Acute Tox. 4 ; H302

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

Weight fraction : $\geq 0,5 - < 1$ %

Classification 1272/2008 [CLP] : 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 : $\geq 0,1 - < 0,5$ %

Classification 1272/2008 [CLP] : Acute Tox. 4 ; H302 Skin Sens. 1 ; H317 Aquatic Chronic 2 ; H411

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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

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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

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

Limit value type (country of origin) : TLV/TWA (GB)

Limit value : 0,5 mg/m³

2,2'-OXYBIETHANOL ; CAS No. : 111-46-6

Limit value type (country of origin) : TLV/TWA (GB)

Limit value : 23 ppm / 101 mg/m³

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

Limit value type (country of origin) : TLV/STEL (GB)

Limit value : 2 mg/m³

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/m³

Limit value type : DNEL Consumer (local) (2,2'-OXYBIETHANOL ; CAS No. : 111-46-6)

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Exposure route : Inhalation
Exposure frequency : Long-term (repeated)
Limit value : 12 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 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) (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 (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 (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 (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) (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

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, 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 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)

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Exposure route :	Soil
Limit value :	0,00012 mg/kg
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, 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 (STP) (1,4-DIHYDROXYBENZENE ; CAS No. : 123-31-9)
Limit value :	0,71 mg/l
Limit value type :	PNEC sewage treatment plant (STP) (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Limit value :	10 mg/l

8.2 Exposure controls

Personal protection equipment

Eye/face protection

Eye glasses with side protection DIN EN 166

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.

Body protection

Body protection: not required.

Respiratory protection

Usually no personal respiratory 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 : yellow-orange

Odour : characteristic

Safety relevant basis data

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

Initial boiling point and boiling range : (1013 hPa) ca. 100 °C

Decomposition temperature : (1013 hPa) No data available

Flash point : not applicable

Ignition temperature : not applicable

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Lower explosion limit :				not applicable
Upper explosion limit :				not applicable
Vapour pressure :	(50 °C)			No data available
Density :	(20 °C)		1,2 - 1,4	g/cm ³
Solvent separation test :	(20 °C)	<	3	%
Water solubility :	(20 °C)		100	Wt %
pH value :			10 - 11	
log P O/W :				No data available
Flow time :	(20 °C)	<	12	s
Odour threshold :				No data available
Maximum VOC content (EC) :			3	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 :	3302 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

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Effective dose : 367 mg/kg
Parameter : LD50 (POTASSIUM CARBONATE ; CAS No. : 584-08-7)
Exposure route : Oral
Species : Rat
Effective dose : > 2000 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 (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 (POTASSIUM CARBONATE ; CAS No. : 584-08-7)
Exposure route : Oral
Effective dose : 500 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 (POTASSIUM CARBONATE ; CAS No. : 584-08-7)
Exposure route : Dermal
Species : Rabbit

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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 : Inhalative (vapour)
Effective dose : not relevant
Parameter : LC50 (POTASSIUM CARBONATE ; CAS No. : 584-08-7)
Exposure route : Inhalation
Species : Rat
Effective dose : > 4,96 mg/kg
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

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

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 (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 (POTASSIUM CARBONATE ; CAS No. : 584-08-7)

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Species : Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter : Acute (short-term) fish toxicity
Effective dose : 68 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 (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

Chronic (long-term) fish toxicity

Parameter : NOEC (POTASSIUM CARBONATE ; CAS No. : 584-08-7)
Species : Oncorhynchus mykiss (Rainbow trout)
Evaluation parameter : Chronic (long-term) fish toxicity
Effective dose : 33 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 (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

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Exposure time : 24 h
Parameter : EC50 (POTASSIUM CARBONATE ; CAS No. : 584-08-7)
Species : Daphnia magna (Big water flea)
Evaluation parameter : Acute (short-term) daphnia toxicity
Effective dose : 200 mg/l
Exposure time : 48 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

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 (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 : 0,25 h
Parameter : EC50 (2,2` -OXYBISETHANOL ; CAS No. : 111-46-6)
Evaluation parameter : Bacteria toxicity
Effective dose : > 1,995 mg/l
Exposure time : 0,5 h
Parameter : EC50 (4-(HYDROXYMETHYL)-4-METHYL-1-PHENYL-PYRAZOLIDIN-3-ON ; CAS No. : 13047-13-7)
Species : Pseudomonas putida

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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*

SECTION 14: Transport information

14.1 UN number

UN 3082

14.2 UN proper shipping name

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Land transport (ADR/RID)

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 I · E 1
Hazard label(s) : 9 / N

Sea transport (IMDG)

Class(es) : 9
EmS-No. : F-A / S-F
Special provisions : LQ 5 I · 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
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 73/78 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

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

02. Classification of the substance or mixture · 02. Label elements · 02. Labelling according to Regulation (EC) No. 1272/2008 [CLP] - Hazard components for labelling · 03. Hazardous ingredients

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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
CO₂ = 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

None

16.4 Classification for mixtures and used evaluation method according to regulation (EC) 1272/2008 [CLP]

The classification was carried out according to the calculation method of Regulation No. (EC) 1272/2008 [CLP].

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.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.

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H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
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.
