

Sanodure Bronze 2LW

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Substance key: KS9063

Revision Date: 08.02.2023

Version : 5 - 0 / EU

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

1.1. Product identifier

Trade name

Sanodure Bronze 2LW

Material number: 102255

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

Relevant identified uses of the substance or mixture

Industry sector : Metal extraction, refining and processing of metals
Type of use : aluminium dye

1.3. Details of the supplier of the safety data sheet

Identification of the company

Heubach Colorants Germany GmbH
Brüningstraße 50
65929 Frankfurt am Main
Telephone no. : +49 69 305 13619

Information about the substance/mixture

Product Stewardship
e-mail: SDS.PI.Europe@clariant.com

1.4. Emergency telephone number

00800-5121 5121 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Long-term (chronic) aquatic hazard, Category 3 H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P273 Avoid release to the environment.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labelling

EUH208 Contains reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1). May produce an allergic reaction.

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

No additional hazards are known except those derived from the labelling.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : azo dyestuff/chromium complex
anionic

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
2-Methylpentane-2,4-diol	107-41-5 203-489-0 603-053-00-3	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - < 10
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9 613-167-00-5 01-2120764691-48	Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 2; H310 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH071 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 100 specific concentration limit Skin Corr. 1C; H314 >= 0,6 %	>= 0,0002 - < 0,0015

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		Skin Irrit. 2; H315 0,06 - < 0,6 % Eye Irrit. 2; H319 0,06 - < 0,6 % Skin Sens. 1A; H317 >= 0,0015 % Eye Dam. 1; H318 >= 0,6 %	
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For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Get medical advice/ attention if you feel unwell.
- If inhaled : If inhaled, remove to fresh air.
- In case of skin contact : After contact with skin, wash immediately with plenty of soap and water.
- In case of eye contact : Rinse immediately with plenty of water for at least 15 minutes.
- If swallowed : If swallowed, call a poison control centre or doctor immediately.
Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No symptoms known currently.
- Risks : No hazards known at this time.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Product is compatible with standard fire-fighting agents.
- Unsuitable extinguishing media : No restrictions

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : Carbon oxides
- Chromium oxides
- Nitrogen oxides (NOx)

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Sulphur oxides

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

5.3 Advice for firefighters

Special protective equipment for firefighters : Self-contained breathing apparatus

Further information : Cool container and metallic parts with a water spray jet

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear suitable protective equipment.

6.2 Environmental precautions

Environmental precautions : The product should not be allowed to enter drains, water courses or the soil.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up mechanically. Rinse away rest with water.
Rinse with water.

6.4 Reference to other sections

Information regarding Safe handling, see chapter 7., For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : No special measures necessary if stored and handled as prescribed.
Avoid dust formation.

Advice on protection against fire and explosion : Potential dust explosion hazard.

Hygiene measures : Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

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7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions : Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

7.3 Specific end use(s)

Specific use(s) : No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
2-Methylpentane-2,4-diol CAS-No.: 107-41-5	Workers	Inhalation	Long-term systemic effects	44,4 mg/m ³
	Remarks:DNEL			
	Workers	Inhalation	Long-term local effects	49 mg/m ³
Remarks:DNEL				
	Workers	Inhalation	Acute local effects	98 mg/m ³
Remarks:DNEL				
	Workers	Dermal	Long-term systemic effects	42 mg/kg bw/day
Remarks:DNEL				
	Consumers	Inhalation	Long-term systemic effects	7,8 mg/m ³
Remarks:DNEL				
	Consumers	Inhalation	Long-term local effects	25 mg/m ³
Remarks:DNEL				
	Consumers	Inhalation	Acute local effects	25 mg/m ³
Remarks:DNEL				
	Consumers	Inhalation	Acute local effects	49 mg/m ³
	Consumers	Dermal	Long-term systemic effects	15 mg/kg bw/day
Remarks:DNEL				
	Consumers	Oral	Long-term systemic effects	1,5 mg/kg bw/day
Remarks:DNEL				
Sodium sulphate CAS-No.: 7757-82-6	Workers	Inhalation	Long-term systemic effects	20 mg/m ³
	Remarks:DNEL			
	Workers	Inhalation	Long-term local effects	20 mg/m ³
Remarks:DNEL				
	General population	Inhalation	Long-term systemic effects	12 mg/m ³
Remarks:DNEL				

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	General population	Inhalation	Long-term local effects	12 mg/m ³
	Remarks:DNEL			
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) CAS-No.: 55965-84-9	Workers	Inhalation	Long-term local effects	0,02 mg/m ³
	Remarks:DNEL			
	Workers	Inhalation	Acute local effects	0,04 mg/m ³
	Remarks:DNEL			
	Consumers	Inhalation	Long-term local effects	0,02 mg/m ³
	Remarks:DNEL			
	Consumers	Inhalation	Acute local effects	0,04 mg/m ³
	Remarks:DNEL			
	Consumers	Oral	Long-term systemic effects	0,09 mg/kg bw/day
	Remarks:DNEL			
	Consumers	Oral	Acute systemic effects	0,11 mg/kg bw/day
	Remarks:DNEL			

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
2-Methylpentane-2,4-diol CAS-No.: 107-41-5	Fresh water	0,429 mg/l
	Marine water	0,043 mg/l
	Sewage treatment plant	20 mg/l
	Soil	0,066 mg/kg dry weight (d.w.)
	Fresh water sediment	1,59 mg/kg dry weight (d.w.)
	Marine sediment	0,159 mg/kg dry weight (d.w.)
	Sodium sulphate CAS-No.: 7757-82-6	Fresh water
Marine water		1,109 mg/l
Water (intermittent release)		17,66 mg/l
Fresh water sediment		40,2 mg/kg dry weight (d.w.)
Marine sediment		4,02 mg/kg dry weight (d.w.)
Soil		1,54 mg/kg dry weight (d.w.)
Sewage treatment plant		800 mg/l
reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1) CAS-No.: 55965-84-9	Fresh water	3,39 µg/l
	Marine water	3,39 µg/l

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	Sewage treatment plant	0,23 mg/l
	Soil	0,01 mg/kg dry weight (d.w.)
	Intermittent use/release	3,39 µg/l
	Fresh water sediment	0,027 mg/kg dry weight (d.w.)
	Marine sediment	0,027 mg/kg dry weight (d.w.)

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Safety glasses

Hand protection

Remarks : Chemical resistant gloves Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Skin and body protection : working clothes

Respiratory protection : Wear dust mask when handling large quantities

Protective measures : Observe the usual precautions for handling chemicals.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Granules

Colour : brown

Odour : not significant

Odour Threshold : not required

Melting point : Decomposition: no
Not applicable

Boiling point : (1.013 hPa)
Decomposition: no
Not applicable

Flammability : no reaction up to 360 °C
Method: Sandoz Ignition test of deposited dust.
Remarks: Ignition test of deposited dust

Upper explosion limit / upper flammability limit : Not applicable

Lower explosion limit / Lower flammability limit : Not applicable

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Flash point	:	Not applicable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	230 °C Heating rate: 0,75 K/min Method: SANDOZ Radex dynamic decomposition test
		210 °C Method: SANDOZ long duration test open cup Decomposition Heating rate: 0 K/min open cup
pH	:	approx. 6 (20 °C) Concentration: 3 g/l
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	no data available
Solubility(ies)		
Water solubility	:	approx. 5 g/l (20 °C)
Partition coefficient: n-octanol/water	:	not determined
Vapour pressure	:	Not applicable
Relative density	:	no data available
Density	:	not determined
Bulk density	:	approx. 800 kg/m ³
Relative vapour density	:	Not applicable
Particle characteristics		
Particle size	:	not determined

9.2 Other information

Oxidizing properties	:	no data available
Self-ignition	:	no data available
Substances and mixtures, which in contact with water, emit flammable gases	:	Method: according to Lütolf (ESCIS Vol. 1)
Metal corrosion rate	:	Not applicable

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Evaporation rate	:	Not applicable
Minimum ignition energy	:	> 1 J (1.013 hPa) Method: modified Hartmann tube
Molecular weight	:	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

Hazardous reactions : When used and handled as intended, none.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : not known

10.6 Hazardous decomposition products

When used and handled as intended, none.

SECTION 11: Toxicological information

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

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: 1999/45/EC

Acute inhalation toxicity : Remarks: no data available

Acute dermal toxicity : Remarks: no data available

Components:

2-Methylpentane-2,4-diol:

Acute oral toxicity : LD0 (Rat, male and female): >= 2.000 mg/kg
Method: OECD Test Guideline 420
GLP: yes

Acute inhalation toxicity : LC0 (Rat, male): saturated vapor
Exposure time: 8 h
Test atmosphere: vapour

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Method: OECD Test Guideline 403

GLP: no

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD0 (Rat, male and female): \geq 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Acute oral toxicity : LD50 (Rat): 64 mg/kg
Acute toxicity estimate: Method: Calculation method

Acute inhalation toxicity : LC50 (Rat, male and female): 0,171 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes
Assessment: Corrosive to the respiratory tract.
Acute toxicity estimate: Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : LD50 (Rabbit): 92,4 mg/kg
Acute toxicity estimate: Method: Calculation method

Skin corrosion/irritation

Product:

Species : Rabbit
Method : 16CFR1500.41
Result : No skin irritation

Components:

2-Methylpentane-2,4-diol:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : Irritating to skin.
GLP : yes

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive after 1 to 4 hours of exposure

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GLP : no

Serious eye damage/eye irritation

Product:

Species : Rabbit
Method : 16CFR1500.42
Result : No eye irritation

Components:

2-Methylpentane-2,4-diol:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Irritating to eyes.
GLP : yes

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Species : Rabbit
Method : Other
Result : Risk of serious damage to eyes.
GLP : no

Respiratory or skin sensitisation

Product:

Remarks : no data available

Components:

2-Methylpentane-2,4-diol:

Test Type : Guinea pig maximization test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.
GLP : yes

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Test Type : Maximisation Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : The product is a skin sensitiser, sub-category 1A.
GLP : yes

Assessment : Toxic if swallowed., Fatal in contact with skin., Fatal if inhaled., Causes severe skin burns and eye damage. May cause an allergic skin reaction.

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Germ cell mutagenicity

Product:

Genotoxicity in vitro : Remarks: no data available

Germ cell mutagenicity-
Assessment : No information available.

Components:

2-Methylpentane-2,4-diol:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 1250 - 5000 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Test Type: In vitro gene mutation study in mammalian cells
Test system: mouse lymphoma cells
Concentration: 0,16 - 10 mM
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 31,25 - 4000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Germ cell mutagenicity-
Assessment : In vitro tests did not show mutagenic effects

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Genotoxicity in vitro : Test Type: In vitro study
Metabolic activation: with and without metabolic activation
Result: Conflicting results have been seen in different studies.

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Rat
Cell type: Bone marrow
Application Route: Oral
Exposure time: <= 5 d
Dose: 1-5 x <= 28 mg/kg
Result: negative

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Test Type: Micronucleus test

Species: Mouse

Application Route: Oral

Exposure time: <= 5 d

Dose: 1-5 x <= 20 - 30 mg/kg

Result: negative

Germ cell mutagenicity-
Assessment : In vivo tests did not show mutagenic effects

Carcinogenicity

Product:

Carcinogenicity -
Assessment : No information available.

Components:

2-Methylpentane-2,4-diol:

Carcinogenicity -
Assessment : Not classifiable as a human carcinogen.

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Carcinogenicity -
Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Product:

Reproductive toxicity -
Assessment : No information available.

Components:

2-Methylpentane-2,4-diol:

Effects on fertility : Species: Rat, male and female
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 200 - 500 - 1000 mg/kg
General Toxicity - Parent: NOAEL: >= 1.000 mg/kg body weight
General Toxicity F1: NOAEL: 500 mg/kg body weight
Method: OECD Test Guideline 421
GLP: yes

Effects on foetal development : Species: Rat
Application Route: oral (gavage)
Dose: 30 - 300 - 1000 mg/kg
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Teratogenicity: NOAEL: 300 mg/kg body weight
Method: OECD Test Guideline 414

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GLP: yes

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments. Animal experiments showed mutagenic and teratogenic effects.

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Effects on fertility : Species: Rat, male and female
Application Route: Drinking water
Dose: 25 - 75 - 225 ppm
General Toxicity - Parent: NOAEL: 16,3 - 24,7 mg/kg body weight
General Toxicity F1: NOAEL: 16,3 - 24,7 mg/kg body weight
Method: Other
GLP: yes

Species: Rat, male and female
Application Route: Drinking water
Dose: 30 - 100 - 300 ppm
General Toxicity - Parent: NOAEL: 2,8 - 4,4 mg/kg body weight
General Toxicity F1: NOAEL: 22,7 - 28 mg/kg body weight
General Toxicity F2: NOAEL: 35,7 - 39,1 mg/kg body weight
Method: OECD Test Guideline 416
GLP: yes

Effects on foetal development : Species: Rat, male and female
Application Route: oral (gavage)
Dose: <= 15 mg/kg
Developmental Toxicity: NOAEL: 15 mg/kg body weight
Method: Other

Species: Rat, male and female
Application Route: oral (gavage)
General Toxicity Maternal: NOAEL: <= 3,95 mg/kg body weight
Method: Other

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity
Embryotoxicity classification not possible from current data.

STOT - single exposure

Product:

Remarks : no data available

Components:

2-Methylpentane-2,4-diol:

Assessment : The substance or mixture is not classified as specific target

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organ toxicant, single exposure.

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

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

STOT - repeated exposure

Product:

Remarks : no data available

Components:

2-Methylpentane-2,4-diol:

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

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

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

Repeated dose toxicity

Product:

Remarks : This information is not available.

Components:

2-Methylpentane-2,4-diol:

Species : Rat, male and female
NOAEL : 50 mg/kg
Application Route : oral (gavage)
Exposure time : 91 d
Number of exposures : daily
Dose : 50 - 150 - 450 mg/kg
Control Group : yes
Method : OECD Test Guideline 408
GLP : yes

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Species : Rat, male and female
NOAEL : 16,3 - 24,7 mg/kg
Application Route : Drinking water
Exposure time : 90 d
Number of exposures : daily
Dose : 25 - 75 - 225 ppm
Control Group : yes
Method : Other

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GLP : yes

Aspiration toxicity

Product:

no data available

Components:

2-Methylpentane-2,4-diol:

No aspiration toxicity classification

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC0 (Oncorhynchus mykiss (rainbow trout)): 50 mg/l
Exposure time: 48 h
Method: mod. routine bioassay method of 1.11.74

LC50 (Oncorhynchus mykiss (rainbow trout)): 90 mg/l
Exposure time: 48 h
Method: mod. routine bioassay method of 1.11.74

LC100 (Oncorhynchus mykiss (rainbow trout)): 200 mg/l
Exposure time: 48 h
Method: mod. routine bioassay method of 1.11.74

Toxicity to daphnia and other aquatic invertebrates : Remarks: no data available

Toxicity to algae/aquatic plants : Remarks: no data available

Toxicity to fish (Chronic toxicity) : Remarks: no data available

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Toxicity to microorganisms : IC50 (activated sludge): > 100 mg/l
End point: Bacteria toxicity (respiration inhibition)
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

Components:

2-Methylpentane-2,4-diol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8.690 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: no

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 5.410 mg/l
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: no

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 429 mg/l
End point: Growth rate
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : NOEC : ca. 200 mg/l
End point: Growth rate
Exposure time: 10 d
Test Type: aquatic
Analytical monitoring: no
Method: Other
GLP: no
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to fish (Chronic toxicity) : Remarks: not required

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: not required

Toxicity to soil dwelling organisms : Remarks: Not applicable

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Plant toxicity : Remarks: Not applicable

Sediment toxicity : Remarks: Not applicable

Toxicity to terrestrial organisms : Remarks: Not applicable

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Toxicity to fish : EC50 (Oncorhynchus mykiss (rainbow trout)): 0,22 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,1 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Skeletonema costatum (marine diatom)): 0,0052 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 201

NOEC (Skeletonema costatum (marine diatom)): 0,00049 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 100

Toxicity to microorganisms : EC50 (activated sludge): 7,92 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 0,098 mg/l
Exposure time: 28 d
Species: Oncorhynchus mykiss (rainbow trout)
Method: OECD Test Guideline 215

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,004 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 202

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to soil dwelling organisms : LC50:
86,6 mg/kg dry weight (d.w.)
Exposure time: 14 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207

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NOEC:
8,83 mg/kg dry weight (d.w.)
Exposure time: 14 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Product:

Biodegradability : Test Type: aerobic
Concentration: 120 mg TOC/l
Biodegradation: approx. 23 %
Related to: TOC
Exposure time: 14 d
Method: HOECHST method

Components:

2-Methylpentane-2,4-diol:

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Concentration: 2,3 mg ThOD/l
Result: Readily biodegradable.
Biodegradation: 81 %
Related to: Carbon dioxide (CO₂)
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

Photodegradation : Test Type: air
Rate constant: $(1.5 \pm 0.4) \times 10^{-11} \text{ cm}^3 \text{ mol}^{-1} \text{ s}^{-1}$
Method: see user defined free text
GLP: no
Remarks: Decomposes rapidly in contact with light.

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Biodegradability : Test Type: aerobic
Inoculum: activated sludge
Result: Not rapidly biodegradable
Method: OECD Test Guideline 301B

Photodegradation : Test Type: water
Light source: Sunlight

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12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: not tested.

Components:

2-Methylpentane-2,4-diol:

Bioaccumulation : Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Bioaccumulation : Bioconcentration factor (BCF): 3,6
Method: calculated
Remarks: Does not accumulate in organisms.

Partition coefficient: n-octanol/water : log Pow: -0,71 - 0,75
Method: OECD Test Guideline 107
GLP: yes

12.4 Mobility in soil

Components:

2-Methylpentane-2,4-diol:

Distribution among environmental compartments : Remarks: Not applicable

12.5 Results of PBT and vPvB assessment

Product:

Assessment : Remarks: no data available
: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

2-Methylpentane-2,4-diol:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

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12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Environmental fate and pathways : no data available

Additional ecological information : no data available

Components:

2-Methylpentane-2,4-diol:

Environmental fate and pathways : not available

Additional ecological information : The product should not be allowed to enter drains, water courses or the soil.

reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Additional ecological information : The product should not be allowed to enter drains, water courses or the soil.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

Contaminated packaging : Consider recycling.

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR	not restricted
ADN	not restricted
RID	not restricted
IATA	not restricted
IMDG	not restricted

14.6. Special precautions for user

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See sections 6 to 8 of this Safety Data Sheet.

14.7. Maritime transport in bulk according to IMO instruments

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
Number on list **75**
If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Council Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors : Neither banned nor restricted

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Other regulations:

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

15.2 Chemical safety assessment

No Chemical Safety Assessment (CSA) is yet available for the substance, or for the component substances, contained in this product.

SECTION 16: Other information

Full text of H-Statements

H301 : Toxic if swallowed.

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H310	:	Fatal in contact with skin.
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.
H330	:	Fatal if inhaled.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
EUH071	:	Corrosive to the respiratory tract.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Skin Corr.	:	Skin corrosion
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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Classification of the mixture:

Aquatic Chronic 3 H412

Classification procedure:

Based on product data or assessment

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