according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



# POWERBOND - 225 ML / 242 G (comp. A)

 Version
 Revision Date:
 SDS Number:
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 10.0
 22.11.2023
 10678247-00014
 Date of first issue: 11.06.2010

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

1.1 Product identifier

Trade name : POWERBOND - 225 ML / 242 G (comp. A)

Product code : 0893450100

Unique Formula Identifier

(UFI)

: XWS2-D08U-500T-8Y5J

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

Use of the Sub- : Adhesives

stance/Mixture Professional use product

Recommended restrictions

on use

: Not applicable

1.3 Details of the supplier of the safety data sheet

Company : Adolf Wuerth GmbH & Co. KG

Reinhold-Würth-Str. 12-17

74653 Künzelsau

Telephone : +49 794015 0

Telefax : +49 794015 10 00

E-mail address of person

responsible for the SDS

isi@wuerth.com

1.4 Emergency telephone number

+49 (0)6132 - 84463

#### **SECTION 2: Hazards identification**

### 2.1 Classification of the substance or mixture

### Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2 H319: Causes serious eye irritation.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

Long-term (chronic) aquatic hazard, Cat-H411: Toxic to aquatic life with long lasting effects.

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#### 2.2 Label elements

### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms





Signal word : Warning

Hazard statements : H315 Causes skin irritation.

H317 May cause an allergic skin reaction.H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P261 Avoid breathing spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P391 Collect spillage.

#### Hazardous components which must be listed on the label:

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)

1,4-Bis(glycidyloxymethyl)cyclohexane

#### **Additional Labelling**

EUH205 Contains epoxy constituents. May produce an allergic reaction.

#### 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.

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# **SECTION 3: Composition/information on ingredients**

### 3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	25068-38-6 500-033-5 603-074-00-8	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Chronic 2; H411 ——————————————————————————————————	>= 50 - < 70
1,4- Bis(glycidyloxymethyl)cyclohexan e	14228-73-0 238-098-4	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1; H317 Aquatic Chronic 3; H412 Acute toxicity estimate  Acute oral toxicity: 300,03 mg/kg	>= 10 - < 20
[3-(2,3- Epoxypro- poxy)propyl]trimethoxysilane	2530-83-8 219-784-2	Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 2; H371 (Central nervous system, optic nerve) Aquatic Chronic 3; H412  Acute toxicity estimate  Acute oral toxicity: > 300 - 2.000 mg/kg	>= 1 - < 2,5
Cristobalite	14464-46-1 238-455-4	Carc. 1A; H350i STOT RE 2; H373 (Lungs)	>= 0,1 - < 1

For explanation of abbreviations see section 16.

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#### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

Protection of first-aiders : First Aid responders should pay attention to self-protection,

and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

If inhaled : If inhaled, remove to fresh air.

Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with plenty of water

for at least 15 minutes while removing contaminated clothing

and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention.

If swallowed : If swallowed, DO NOT induce vomiting unless directed to do

so by medical personnel. Get medical attention.

Rinse mouth thoroughly with water.

Never give anything by mouth to an unconscious person.

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

Risks : Causes skin irritation.

May cause an allergic skin reaction. Causes serious eye irritation.

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

Treatment : Treat symptomatically and supportively.

#### **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

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Unsuitable extinguishing

media

None known.

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

Specific hazards during fire-

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod: :

ucts

Carbon oxides Metal oxides Silicon oxides

#### 5.3 Advice for firefighters

Special protective equipment:

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

#### **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

### 6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers)

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

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

Methods for cleaning up : Soak up with inert absorbent material.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

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mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

**SECTION 7: Handling and storage** 

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Do not get on skin or clothing.

Do not breathe spray. Do not swallow. Do not get in eyes.

Wash skin thoroughly after handling.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Keep away from water. Protect from moisture.

Do not eat, drink or smoke when using this product.

Take care to prevent spills, waste and minimize release to the

environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye

flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace.

Wash contaminated clothing before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Keep in properly labelled containers. Store in accordance with

the particular national regulations.

Advice on common storage : Do not store with the following product types:

Strong oxidizing agents

Gases

Storage class (TRGS 510) : 10

7.3 Specific end use(s)

Specific use(s) : No data available

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# **SECTION 8: Exposure controls/personal protection**

# 8.1 Control parameters

### **Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Silica, vitreous	60676-86-0	AGW (Alveolate fraction)	0,3 mg/m3	DE TRGS 900
	Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
Cristobalite	14464-46-1	TWA (Respirable dust)	0,1 mg/m3	2004/37/EC
	Further information: Carcinogens or mutagens			

This substance(s) is not bioavailable and therefore does not contribute to a dust inhalation hazard.

Cristobalite

### Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form	Control parameters	Basis
		of exposure)		
Methanol	67-56-1	TWA	200 ppm	2006/15/EC
			260 mg/m3	
	Further inform	nation: Indicative, Ide	entifies the possibility of signif	ficant uptake
	through the skin			
		AGW	100 ppm	DE TRGS
			130 mg/m3	900
	Peak-limit: excursion factor (category): 2;(II)			
	Further information: Skin absorption, When there is compliance with the OEL			
	and biological tolerance values, there is no risk of harming the unborn child			

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	Workers	Inhalation	Long-term systemic effects	12,25 mg/m3
	Workers	Inhalation	Acute systemic effects	12,25 mg/m3
	Workers	Skin contact	Long-term systemic effects	8,33 mg/kg bw/day
	Workers	Skin contact	Acute systemic effects	8,33 mg/kg bw/day
	Consumers	Skin contact	Long-term systemic effects	3,571 mg/kg bw/day
	Consumers	Skin contact	Acute systemic effects	3,571 mg/kg bw/day

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	Consumers	Ingestion	Long-term systemic effects	0,75 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	0,75 mg/kg bw/day
[3-(2,3- Epoxypro- poxy)propyl]trimethox ysilane	Workers	Inhalation	Long-term systemic effects	70,5 mg/m3
	Workers	Skin contact	Long-term systemic effects	10 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	17 mg/m3
	Consumers	Skin contact	Long-term systemic effects	5 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	5 mg/kg bw/day
1,4- Bis(glycidyloxymethyl) cyclohexane	Workers	Inhalation	Long-term systemic effects	3,52 mg/m3
	Workers	Skin contact	Long-term systemic effects	1 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,86 mg/m3
	Consumers	Skin contact	Long-term systemic effects	0,5 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0,5 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
Reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	Fresh water	0,006 mg/l
	Freshwater - intermittent	0,018 mg/l
	Marine water	0,001 mg/l
	Marine water - intermittent	0,002 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	0,996 mg/kg dry weight (d.w.)
	Marine sediment	0,1 mg/kg dry weight (d.w.)
	Soil	0,196 mg/kg dry weight (d.w.)
	Secondary Poisoning	11 mg/kg food
Glass, oxide, chemicals	Fresh water	6,5 µg/l
	Marine water	3,4 µg/l
	Sewage treatment plant	100 μg/l
	Fresh water sediment	174 mg/kg
	Marine sediment	164 mg/kg
	Soil	147 mg/kg
	Oral (Secondary Poisoning)	10,9 mg/kg food

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[3-(2,3- Epoxypro- poxy)propyl]trimethoxysilane	Fresh water	0,45 mg/l
рохуургоруппиненнохуенане	Marine water	0,045 mg/l
	Freshwater - intermittent	0,45 mg/l
	Sewage treatment plant	8,2 mg/l
	Fresh water sediment	1,6 mg/kg dry weight (d.w.)
	Marine sediment	0,16 mg/kg dry weight (d.w.)
	Soil	0,063 mg/kg dry weight (d.w.)
1,4- Bis(glycidyloxymethyl)cyclohexan e	Fresh water	0,117 mg/l
	Freshwater - intermittent	1,17 mg/l
	Marine water	0,012 mg/l
	Sewage treatment plant	0,6 mg/l
	Fresh water sediment	0,47 mg/kg dry weight (d.w.)
	Marine sediment	0,047 mg/kg dry weight (d.w.)
	Soil	0,24 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	1 mg/kg food

#### 8.2 Exposure controls

#### **Engineering measures**

Processing may form hazardous compounds (see section 10). Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

#### Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:

Safety goggles

Equipment should conform to DIN EN 166

Hand protection

Material : Nitrile rubber
Break through time : > 240 min
Glove thickness : 0,2 - 0,35 mm

Directive : Equipment should conform to DIN EN 374

Remarks : Choose gloves to protect hands against chemicals depending

on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical

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resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

Respiratory protection : If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection.

Equipment should conform to DIN EN 137

Filter type : Self-contained breathing apparatus

### **SECTION 9: Physical and chemical properties**

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

Physical state : viscous, liquid

Colour : black

Odour : No data available

Odour Threshold : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling :

range

> 150,00 °C

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Ignitable (see flash point)

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Flash point : 135 °C

Auto-ignition temperature : No data available

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Decomposition temperature : No data available

pH : substance/mixture is non-soluble (in water)

Viscosity

Viscosity, kinematic : > 10000 mm2/s (40 °C)

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

Not applicable

Vapour pressure : < 0,1 hPa (20 °C)

Relative density : 1,089 (20 °C)

Density : 1,089 g/cm³ (20 °C)

Relative vapour density : No data available

Particle characteristics

Particle size : Not applicable

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

### **SECTION 10: Stability and reactivity**

### 10.1 Reactivity

Not classified as a reactivity hazard.

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10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Can react with strong oxidizing agents.

Hazardous decomposition products will be formed upon con-

tact with water or humid air.

10.4 Conditions to avoid

Conditions to avoid : Exposure to moisture

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

Water

10.6 Hazardous decomposition products

Contact with water or humid : Methanol

air

#### **SECTION 11: Toxicological information**

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

Information on likely routes of : Inhalation

exposure Skin contact Ingestion

Eye contact

**Acute toxicity** 

Not classified based on available information.

**Product:** 

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg

Method: Calculation method

**Components:** 

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 420

Assessment: The substance or mixture has no acute oral tox-

icity

Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: Based on data from similar materials

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1,4-Bis(glycidyloxymethyl)cyclohexane:

Acute oral toxicity : LD50 (Rat): > 300 - 2.000 mg/kg

Method: OECD Test Guideline 425

Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Acute oral toxicity : LD50 (Rat): 8.025 mg/kg

Acute toxicity estimate (Humans): > 300 - 2.000 mg/kg

Method: Expert judgement

Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 5,3 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit, male): 4.248 mg/kg

Cristobalite:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Skin corrosion/irritation

Causes skin irritation.

**Components:** 

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular

weight ≤ 700):

Result : Skin irritation

Remarks : Based on national or regional regulation.

1,4-Bis(glycidyloxymethyl)cyclohexane:

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 439

Remarks : Based on data from similar materials

Result : Skin irritation

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#### [3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Species : Rabbit

Result : Mild skin irritation

**Cristobalite:** 

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### **Components:**

# Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Result : Irritation to eyes, reversing within 21 days Remarks : Based on national or regional regulation.

#### 1,4-Bis(glycidyloxymethyl)cyclohexane:

Species : Bovine cornea

Method : OECD Test Guideline 437

Remarks : Based on data from similar materials

Result : No eye irritation

# [3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Species : Rabbit

Method : OECD Test Guideline 405
Result : Irreversible effects on the eye

Cristobalite:

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

#### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

### Respiratory sensitisation

Not classified based on available information.

#### **Components:**

# Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Test Type : Maximisation Test Exposure routes : Skin contact

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Species : Guinea pig

Method : OECD Test Guideline 406

Result : positive

Assessment : Probability or evidence of skin sensitisation in humans

1,4-Bis(glycidyloxymethyl)cyclohexane:

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact Species : Mouse

Method : OECD Test Guideline 429

Result : positive

Remarks : Based on data from similar materials

Assessment : Probability or evidence of skin sensitisation in humans

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Test Type : Buehler Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

Germ cell mutagenicity

Not classified based on available information.

**Components:** 

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Genotoxicity in vitro

Test Type: Bacterial reverse mutation assay (AMES)

Result: equivocal

Test Type: Chromosome aberration test in vitro

Result: positive

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Ingestion

Result: negative

1,4-Bis(glycidyloxymethyl)cyclohexane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: positive

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Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: positive

Remarks: Based on data from similar materials

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Rat

Application Route: Ingestion

Result: negative

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Result: positive

Genotoxicity in vivo : Test Type: In vivo mammalian alkaline comet assay

Species: Rat

Application Route: Ingestion

Method: OECD Test Guideline 489

Result: positive

Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: positive

Germ cell mutagenicity- As-

sessment

Weight of evidence does not support classification as a germ

cell mutagen.

Carcinogenicity

Not classified based on available information.

Components:

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Species : Rat
Application Route : Ingestion
Exposure time : 24 Months

Method : OECD Test Guideline 453

Result : negative

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Version **Revision Date:** SDS Number: Date of last issue: 28.07.2023 10.0 22.11.2023 10678247-00014 Date of first issue: 11.06.2010

**Species** Mouse **Application Route** Skin contact Exposure time 24 Months

**OECD Test Guideline 453** Method

Result negative

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Mouse, male **Application Route** Skin contact Exposure time 482 days Result negative

Cristobalite:

**Species** Humans

Application Route inhalation (dust/mist/fume)

Result positive

Remarks This substance(s) is not bioavailable and therefore does not

contribute to a dust inhalation hazard.

Carcinogenicity - Assess-

Positive evidence from human epidemiological studies (inhalament

tion)

#### Reproductive toxicity

Not classified based on available information.

#### **Components:**

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Effects on fertility Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 416

Result: negative

Effects on foetal develop-

Test Type: Embryo-foetal development ment

Species: Rabbit

Application Route: Skin contact

Result: negative

1,4-Bis(glycidyloxymethyl)cyclohexane:

Effects on fertility Test Type: Reproduction/Developmental toxicity screening

test

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

Test Type: Combined repeated dose toxicity study with the Effects on foetal develop-

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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ment reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Effects on fertility : Test Type: One-generation reproduction toxicity study

Species: Rat

**Application Route: Ingestion** 

Method: OECD Test Guideline 415

Result: negative

Effects on foetal develop: Te

ment

Test Type: Embryo-foetal development

Species: Rat

**Application Route: Ingestion** 

Result: negative

STOT - single exposure

Not classified based on available information.

**Components:** 

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Exposure routes : Ingestion

Target Organs : Central nervous system, optic nerve Assessment : May cause damage to organs. Remarks : Based on data from similar materials

STOT - repeated exposure

Not classified based on available information.

Components:

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular

weight ≤ 700):

Assessment : No significant health effects observed in animals at concentra-

tions of 200 mg/kg bw or less.

**Cristobalite:** 

Exposure routes : inhalation (dust/mist/fume)

Target Organs : Lungs

Assessment : May cause damage to organs through prolonged or repeated

exposure.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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#### Repeated dose toxicity

#### **Components:**

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Species : Rat

NOAEL : 50 mg/kg

LOAEL : 250 mg/kg

Application Route : Ingestion

Exposure time : 90 Days

Method : OECD Test Guideline 408

Species : Mouse

NOAEL : >= 100 mg/kg

Application Route : Skin contact

Exposure time : 13 Weeks

Method : OECD Test Guideline 411

#### 1,4-Bis(glycidyloxymethyl)cyclohexane:

Species : Rat

NOAEL : 300 mg/kg Application Route : Ingestion Exposure time : 8 Weeks

Method : OECD Test Guideline 422

Remarks : Based on data from similar materials

### [3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Species : Rat

NOAEL : > 100 mg/kg
Application Route : Ingestion
Exposure time : 90 Days

Method : OECD Test Guideline 408

Remarks : Based on data from similar materials

# Cristobalite:

Species : Rat LOAEL : 0,003

LOAEL : 0,003 mg/l
Application Route : inhalation (dust/mist/fume)

Exposure time : 13 Weeks

Remarks : This substance(s) is not bioavailable and therefore does not

contribute to a dust inhalation hazard.

#### **Aspiration toxicity**

Not classified based on available information.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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#### 11.2 Information on other hazards

#### **Endocrine disrupting properties**

### **Product:**

The substance/mixture does not contain components consid-Assessment

> ered 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

#### **Components:**

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 1 - 10 mg/l

Exposure time: 96 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 203

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 48 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

EL50 (Scenedesmus capricornutum (fresh water algae)): > 10

- 100 mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

NOELR (Scenedesmus capricornutum (fresh water algae)): >

1 mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

Toxicity to microorganisms IC50 : > 100 mg/l

Exposure time: 3 h

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC: > 0,1 - 1 mg/lExposure time: 21 d

Species: Daphnia magna (Water flea)

Remarks: Based on data from similar materials

#### 1,4-Bis(glycidyloxymethyl)cyclohexane:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 100 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 10 - 100 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 10 -

100 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): > 1

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

Toxicity to microorganisms : EC10 (Pseudomonas putida): > 1 mg/l

Exposure time: 18 h Method: DIN 38 412 Part 8

Remarks: Based on data from similar materials

[3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 55 mg/l

Exposure time: 96 h

Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 710 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 350

mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 130

mg/l

Exposure time: 96 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC10 (activated sludge): > 100 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

NOEC: >= 100 mg/l Exposure time: 21 d

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according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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ic toxicity) Species: Daphnia magna (Water flea)

Method: OECD Test Guideline 211

Cristobalite:

Toxicity to fish : LL50 (Danio rerio (zebra fish)): > 100 mg/l

Exposure time: 96 h

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 24 h

Remarks: Based on data from similar materials

#### 12.2 Persistence and degradability

#### **Components:**

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 5 % Exposure time: 28 d

Method: OECD Test Guideline 301F

#### 1,4-Bis(glycidyloxymethyl)cyclohexane:

Biodegradability : Result: Not readily biodegradable.

Method: OECD Test Guideline 301F

Remarks: Based on data from similar materials

#### [3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 37 % Exposure time: 28 d

Method: Regulation (EC) No. 440/2008, Annex, C.4-A

#### 12.3 Bioaccumulative potential

#### **Components:**

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700):

Partition coefficient: n-

log Pow: 3,5

octanol/water

# 1,4-Bis(glycidyloxymethyl)cyclohexane:

Partition coefficient: n-

: log Pow: 1,98

octanol/water

# [3-(2,3-Epoxypropoxy)propyl]trimethoxysilane:

Partition coefficient: n- : log Pow: 0,5

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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octanol/water Remarks: Calculation

### 12.4 Mobility in soil

No data available

#### 12.5 Results of PBT and vPvB assessment

**Product:** 

Assessment : 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.

### 12.6 Endocrine disrupting properties

**Product:** 

Assessment : The substance/mixture does not contain components consid-

ered 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

No data available

# **SECTION 13: Disposal considerations**

### 13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

According to the European Waste Catalogue, Waste Codes

are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in

discussion with the waste disposal authorities.

Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

Waste Code : The following Waste Codes are only suggestions:

used product

08 04 09, waste adhesives and sealants containing organic

solvents or other hazardous substances

unused product

08 04 09, waste adhesives and sealants containing organic

solvents or other hazardous substances

uncleaned packagings

15 01 10, packaging containing residues of or contaminated

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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by hazardous substances

Acc. Packaging Act properly emptied packaging:
Properly emptied, non-contaminated packaging of non-hazardous products can be supplied to a system for the col-

lection of sales packaging.

#### **SECTION 14: Transport information**

#### 14.1 UN number or ID number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

#### 14.2 UN proper shipping name

**ADN** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin

(number average molecular weight ≤ 700))

**ADR** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin

(number average molecular weight ≤ 700))

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin

(number average molecular weight ≤ 700))

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin

(number average molecular weight ≤ 700))

IATA : Environmentally hazardous substance, liquid, n.o.s.

(Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin

(number average molecular weight ≤ 700))

### 14.3 Transport hazard class(es)

Class Subsidiary risks

 ADN
 : 9

 ADR
 : 9

 RID
 : 9

 IMDG
 : 9

 IATA
 : 9

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#### 14.4 Packing group

**ADN** 

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

**ADR** 

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

**RID** 

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

**IMDG** 

Packing group : III Labels : 9

EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo : 964

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passen: 964

ger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

14.5 Environmental hazards

**ADN** 

Environmentally hazardous : yes

**ADR** 

Environmentally hazardous : yes

rid

Environmentally hazardous : yes

**IMDG** 

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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#### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

#### **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, 3

If you intend to use this product as tattoo ink, please contact your ven-

Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or

not.

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

Not applicable

Regulation (EC) No 1005/2009 on substances that de-

plete the ozone layer

Not applicable

Regulation (EU) 2019/1021 on persistent organic pollu-

tants (recast)

Not applicable

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

Not applicable

(Annex XIV)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Quantity 1 Quantity 2 **ENVIRONMENTAL** E2 200 t 500 t

**HAZARDS** 

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Water hazard class (Germa-

ny)

WGK 2 obviously hazardous to water

Classification according to AwSV, Annex 1 (5.2)

TA Luft List (Germany) : 5.2.1: Total dust:

Not applicable

5.2.2: Inorganic substances in powdered form:

Not applicable

5.2.4: Inorganic substances in gaseous form:

Not applicable

5.2.5: Organic Substances: Class 1: < 0,01 % Methanol 5.2.7.1.1: Carcinogenic substance:

Not applicable

5.2.7.1.1: Quartz fine dust PM4: others: 0,15 % Cristobalite 5.2.7.1.1: Formaldehyde:

Not applicable 5.2.7.1.1: fibres: Not applicable

5.2.7.2: Poorly degradable, easily enrichable and highly toxic

organic substances: Not applicable

Volatile organic compounds : Direct

Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) Volatile organic compounds (VOC) content: 0 %

### Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

#### 15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

# **SECTION 16: Other information**

Other information : Items where changes have been made to the previous version

are highlighted in the body of this document by two vertical

lines.

#### **Full text of H-Statements**

H302 : Harmful if swallowed. H315 : Causes skin irritation.

H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H319 : Causes serious eye irritation.
H350i : May cause cancer by inhalation.
H371 : May cause damage to organs.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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H373 : May cause damage to organs through prolonged or repeated

exposure if inhaled.

H411 : Toxic to aquatic life with long lasting effects. H412 : Harmful to aquatic life with long lasting effects.

#### Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Chronic : Long-term (chronic) aquatic hazard

Carc. : Carcinogenicity
Eye Dam. : Serious eye damage

Eye Irrit. : Eye irritation
Skin Irrit. : Skin irritation
Skin Sens. : Skin sensitisation

STOT RE : Specific target organ toxicity - repeated exposure STOT SE : Specific target organ toxicity - single exposure

2004/37/EC : Europe. Directive 2004/37/EC on the protection of workers

from the risks related to exposure to carcinogens or mutagens

at work

2006/15/EC : Europe. Indicative occupational exposure limit values
DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.

2004/37/EC / TWA : Long term exposure limit 2006/15/EC / TWA : Limit Value - eight hours DE TRGS 900 / AGW : Time Weighted Average

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 -

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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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**

Sheet

Sources of key data used to compile the Safety Data

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-

cy, http://echa.europa.eu/

#### Classification of the mixture: Classification procedure:

Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Aquatic Chronic 2	H411	Calculation method

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

DE / EN