





PROTAVIC ANE 10932

Revision date 12/1/2023 Version 3.4
Replaces the version from: 16/12/2022

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

- 1.1. Product identifier
Trade name: PROTAVIC ANE 10932
Trade code: M6-28157
UFI number: 72P3-6TKD-2101-NKFC
- 1.2. Relevant identified uses of the substance or mixture and uses advised against
Recommended use:
Adhesive for the electronic industry.
Uses advised against:
- 1.3. Details of the supplier of the safety data sheet
Supplier: PROTAVIC INTERNATIONAL
Street: 6 rue Barbès
Postal code/city: 92532 LEVALLOIS PERRET
P.O. Box: CS80050
Country: FRANCE
Telephone: (33).01.41.34.14.00
Telefax: (33).01.41.34.14.16
E-mail (competent person): reach@protex-international.com
- 1.4. Emergency telephone number
ORFILA: (33)-01-45-42-59-59

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture
EC regulation criteria 1272/2008 (CLP)
-  Warning, Skin Irrit. 2, Causes skin irritation.
 -  Warning, Skin Sens. 1, May cause an allergic skin reaction.
 -  Danger, Eye Dam. 1, Causes serious eye damage.
 -  Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

- P261 Avoid breathing gas/mist/vapours/spray.

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P264 Wash hands thoroughly with soap and water after handling.
 P273 Avoid release to the environment.
 P280 Wear protective gloves and eye/face protection.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310 Immediately call a POISON CENTER/doctor/...
 P391 Collect spillage.

Special Provisions:

EUH205 Contains epoxy constituents. May produce an allergic reaction.

Contains

Epoxy resin MW <= 700
 1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether
 Epoxy resin MW <= 700.: May produce an allergic reaction.

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration >= 0.1%

Other Hazards:










No other hazards

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Description: Epoxy resin and mineral filler.

Hazardous components within the meaning of the CLP regulation and related classification:

Quantity	Substance name	Identification numbers	Classification
>= 60% - < 70%	Amorphous silicon dioxide	CAS: 7631-86-9 EC: 231-545-4 REACH No.: 01-21193794 99-16-XXXX	Substance with a Union workplace exposure limit.
>= 15% - < 20%	bis-[4-(2,3-epoxipropoxy)phenyl]propane	Index number: 603-073-00-2 CAS: 1675-54-3 EC: 216-823-5 REACH No.: 01-21194566 19-26-XXXX	 3.2/2 Skin Irrit. 2 H315  3.4.2/1-1A-1B Skin Sens. 1,1A,1B H317  3.3/2 Eye Irrit. 2 H319  4.1/C2 Aquatic Chronic 2 H411
>= 10% - < 12.5%	Epoxy resin MW <= 700.	CAS: 28064-14-4	 3.4.2/1-1A-1B Skin Sens. 1,1A,1B H317  4.1/C2 Aquatic Chronic 2 H411
>= 3% - < 5%	1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether	Index number: 603-072-00-7 CAS: 2425-79-8 EC: 219-371-7 REACH No.: 01-21194940 60-45-XXXX	 3.1/4/Oral Acute Tox. 4 H302  3.1/4/Dermal Acute Tox. 4 H312  3.2/2 Skin Irrit. 2 H315

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			 3.4.2/1-1A-1B Skin Sens. 1,1A,1B H317  3.1/4/Inhal Acute Tox. 4 H332  3.3/1 Eye Dam. 1 H318  4.1/C3 Aquatic Chronic 3 H412
>= 2% - < 3%	Mixture of 2-ethyl-4-methylimidazole-1-propionitrile and 2-ethyl-5-methylimidazole-1-propionitrile	CAS: 568591-00-4 EC: 947-727-8 REACH No.: 01-21207676 32-49-XXXX	 3.1/4/Oral Acute Tox. 4 H302  3.3/2 Eye Irrit. 2 H319  3.9/2 STOT RE 2 H373  4.1/C3 Aquatic Chronic 3 H412
>= 0.1% - < 0.25%	2-Ethyl-4-méthylimidazole	CAS: 931-36-2 EC: 213-234-5 REACH No.: 01-21199809 35-21-XXXX	 3.1/4/Oral Acute Tox. 4 H302  3.2/2 Skin Irrit. 2 H315  3.4.2/1B Skin Sens. 1B H317  3.3/1 Eye Dam. 1 H318

SECTION 4: First aid measures

4.1. Description of first aid measures

Remove contaminated, saturated clothing immediately.

When in doubt or if symptoms are observed, get medical advice.

After inhalation:

No special measures are necessary.

Following skin contact:

Wash immediately with: Water and soap.

In case of skin reactions, consult a physician.

Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

After eye contact:

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:

Rinse mouth immediately and drink plenty of water.

Do not induce vomiting.

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

Skin irritation.

Eye Irritation.

Allergic reactions.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water spray jet.

Dry extinguishing powder.

Foam.

Carbon dioxide (CO₂).

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Unsuitable extinguishing media:

Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products:

Carbon monoxide (CO).

Carbon dioxide (CO₂).

Nitrogen oxides (NO_x).

Silicium dioxide (SiO₂).

5.3. Advice for firefighters

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Collect contaminated fire extinguishing water separately. Do not allow to enter drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Personal protection equipment: see section 8.

For emergency responders:

Personal protection equipment: see section 8.

6.2. Environmental precautions

Cover drains.

Do not allow to enter into soil/subsoil.

Do not allow to enter into surface water or drains.

Ensure waste is collected and contained.

In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

For containment:

Cover drains.

For cleaning up:

Absorb with liquid-binding material (e.g. sand, diatomaceous earth or universal binding agents).

Collect in closed and suitable containers for disposal.

6.4. Reference to other sections

Safe handling: see section 7.

Disposal: see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures:

Avoid:

Skin contact.

Eye contact.

Personal protection equipment: see section 8.

Fire prevention measures:

No special fire protection measures are necessary.

Advices on general occupational hygiene:

When using do not eat, drink, smoke, sniff.

Wash hands before breaks and after work.

Used working clothes should not be worn outside the work area.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions:

Requirements for storage rooms and vessels:

Suitable container/equipment material:

Glass.

Polyethylene (PE).

Unsuitable container/equipment material:

Iron.

Suitable floor material:

The floor should be leak tight, jointless and not absorbent.

Fire prevention measures:

No special fire protection measures are necessary.

Hints on joint storage:

Do not store together with: Oxidizing agents, Amines, Acid, Alkali (lye).

Further information on storage conditions:

Do not store at temperatures above: - 20 °C.

Protect against: Humidity.

Keep the packing dry and well sealed to prevent contamination and absorption of humidity.

7.3. Specific end use(s)

Identified use: see section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit values

Amorphous silicon dioxide - CAS: 7631-86-9

INRS (FR) - type: VME - mg/m³: 10 - Duration: 8 - Duration: h - Behaviour: Indicative

PNEC-values

bis-[4-(2,3-epoxypropoxy)phenyl]propane - CAS: 1675-54-3

PNEC aquatic, freshwater: 0.006 mg/l - Source: ECHA (European Chemicals Agency)

PNEC aquatic, marine water: 0.001 mg/l - Source: ECHA (European Chemicals Agency)

PNEC sewage treatment plant (STP): 10 mg/l - Source: ECHA (European Chemicals Agency)

PNEC sediment, freshwater: 0.341 mg/kg - Source: ECHA (European Chemicals Agency)

PNEC sediment, marine water: 0.034 mg/kg - Source: ECHA (European Chemicals Agency)

PNEC soil, freshwater: 0.065 mg/kg - Source: ECHA (European Chemicals Agency)

PNEC secondary poisoning: 11 mg/kg - Source: ECHA (European Chemicals Agency)

1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether - CAS: 2425-79-8

PNEC aquatic, freshwater: 0.024 mg/l - Source: ECHA (European Chemicals Agency)

PNEC aquatic, marine water: 0.0024 mg/l - Source: ECHA (European Chemicals Agency)

PNEC aquatic, intermittent releases: 0.24 mg/l - Source: ECHA (European Chemicals Agency)

PNEC sewage treatment plant (STP): 100 mg/l - Source: ECHA (European Chemicals Agency)

PNEC sediment, freshwater: 0.084 mg/kg - Source: ECHA (European Chemicals Agency)

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- PNEC sediment,marine water: 0.0084 mg/kg - Source: ECHA (European Chemicals Agency)
PNEC soil, freshwater: 0.0027 mg/kg - Source: ECHA (European Chemicals Agency)
PNEC secondary poisoning: 0.028 mg/kg - Source: ECHA (European Chemicals Agency)
- 2-Ethyl-4-méthylimidazole - CAS: 931-36-2
PNEC aquatic, freshwater: 0.0681 mg/l - Source: ECHA (European Chemicals Agency)
PNEC aquatic, marine water: 0.00681 mg/l - Source: ECHA (European Chemicals Agency)
PNEC aquatic, intermittent releases: 0.681 mg/l - Source: ECHA (European Chemicals Agency)
PNEC sewage treatment plant (STP): 65 mg/l - Source: ECHA (European Chemicals Agency)
PNEC sediment, freshwater: 34.9 mg/kg - Source: ECHA (European Chemicals Agency)
PNEC sediment,marine water: 3.49 mg/kg - Source: ECHA (European Chemicals Agency)
PNEC soil, freshwater: 6.91 mg/kg - Source: ECHA (European Chemicals Agency)
- DNEL-values
- bis-[4-(2,3-epoxypropoxy)phenyl]propane - CAS: 1675-54-3
DNEL worker: DNEL long-term dermal (systemic): 0.75 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
DNEL worker: DNEL long-term inhalative (systemic): 4.93 mg/m³ - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term inhalative (systemic): 0.87 mg/m³ - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term dermal (systemic): 0.089 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term oral (repeated): 0.5 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
- 1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether - CAS: 2425-79-8
DNEL worker: DNEL long-term dermal (systemic): 9.26 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
DNEL worker: DNEL long-term inhalative (systemic): 1.63 mg/m³ - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term dermal (systemic): 5.56 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term inhalative (systemic): 0.48 mg/m³ - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term oral (repeated): 0.56 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
- 2-Ethyl-4-méthylimidazole - CAS: 931-36-2
DNEL worker: DNEL long-term inhalative (systemic): 4.41 mg/m³ - Source: ECHA (European Chemicals Agency)
DNEL worker: DNEL long-term dermal (systemic): 2.5 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
DNEL worker: DNEL long-term dermal (local): 289 µg/cm² - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term inhalative (systemic): 1.09 mg/m³ - Source: ECHA (European Chemicals Agency)

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DNEL consumer: DNEL long-term dermal (systemic): 1.25 mg/kg bw/d - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term dermal (local): 289 µg/cm² - Source: ECHA (European Chemicals Agency)
DNEL consumer: DNEL long-term oral (repeated): 0.62 mg/kg bw/d - Source: ECHA (European Chemicals Agency)

8.2. Exposure controls

Appropriate engineering controls:

See chapter 7. No additional measures necessary.

Personal protective equipment:

Eye/face protection:

Goggles/Face protection shield (DIN 166).

Skin protection:

Hand protection:

Chemical resistant protective gloves (DIN EN 374).

The product

Suitable material: Butyl caoutchouc (butyl rubber) By long-term hand contact - Breakthrough time (minimum wear duration): 8 h - Protection class / EN 374: 6

Suitable material: NBR (nitrile rubber) By long-term hand contact - Breakthrough time (minimum wear duration): 8 h - Protection class / EN 374: 6

Suitable material: PVC (polyvinyl chloride) By long-term hand contact - Breakthrough time (minimum wear duration): 8 h - Protection class / EN 374: 6

Suitable material: CR (polychloroprene, chloroprene rubber) By long-term hand contact - Breakthrough time (minimum wear duration): 8 h - Protection class / EN 374: 6

Suitable material: Butyl caoutchouc (butyl rubber) By short-term hand contact - Breakthrough time (minimum wear duration): 10 min - Protection class / EN 374: 1

Suitable material: NBR (nitrile rubber) By short-term hand contact - Breakthrough time (minimum wear duration): 10 min - Protection class / EN 374: 1

Suitable material: PVC (polyvinyl chloride) By short-term hand contact - Breakthrough time (minimum wear duration): 10 min - Protection class / EN 374: 1

Suitable material: CR (polychloroprene, chloroprene rubber) By short-term hand contact - Breakthrough time (minimum wear duration): 10 min - Protection class / EN 374: 1

Body protection:

Wearing of fully sealed work clothing is recommended.

Suitable protective clothing:

Chemical protection clothing (DIN EN 943-1).

Chemical resistant safety shoes.

Respiratory protection:

Usually no respiratory personal protective equipment is required.

Handling at elevated temperatures without sufficient ventilation.

Suitable respiratory protection apparatus:

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Full/half-face mask (DIN EN 136/DIN EN 140) with filter type (DIN EN 14387): A.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid.
Colour:	Cream.
Odour:	Slight odor.
Odour threshold:	No data available.
pH value	No data available.
Melting point / melting range	No data available.
Boiling temperature / boiling range	>200 °C
Flash point	>100 °C
Vapourisation rate / Evaporation rate	No data available.
Flammable solids:	No data available.
Upper/lower flammability or explosive limits:	
2-Ethyl-4-méthylimidazole - CAS: 931-36-2	
Lower explosion limit (Vol-%): 1.5	Upper explosion limit (Vol-%): 13
Relative vapour density at 20 °C (air=1)	No data available.
Density	1.60
Solubility:	
Water solubility:	Immiscible.
Partition coefficient n-octanol/water (log P O/W)	No data available.
Self ignition temperature	>200 °C
Decomposition temperature	>100 °C
Dynamic viscosity:	ca.65000mPa*s /25 °C (NFT 51210)
Explosive properties	No
Oxidizing power	No

9.2. Other information

Liquid density in kg/l	1.60/20 °C	(NFT 20050)
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SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability

The product is stable if stored as prescribed/indicated.

10.3. Possibility of hazardous reactions

No hazardous reaction when stored and handled according to instruction.

Exothermic polymerization by heating.

10.4. Conditions to avoid

Decomposition takes place from temperatures above: 100 °C

See section 7.

10.5. Incompatible materials

Materials to avoid: Oxidizing agents, Amines, Acid, Alkali (Iye).

10.6. Hazardous decomposition products

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Except particular informations, the toxicological effects of product are assessed by the conventionnal method described in regulation (EC) 1272/2008 [CLP] which take in consideration all health hazards of substances contained in the product.

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The product

Acute oral toxicity - Test: LD50 Rat > 8000 mg/kg - Method: Estimation - Assessment: Not classified.

Skin corrosion / Irritation - Method: Estimation - Assessment: Irritant.

Eye damage / irritation - Method: Estimation - Assessment: Irritant.

Skin sensitisation - Method: Estimation - Assessment: Sensitising.

bis-[4-(2,3-epoxypropoxy)phenyl]propane - CAS: 1675-54-3

Acute oral toxicity - Test: LD50 Rat (female) > 2000 mg/kg - Method: OECD 420 - Source: ECHA (European Chemicals Agency) - Assessment: Not classified.

Acute dermal toxicity - Test: LD50 Rat > 2000 mg/kg - Method: OECD 402 - Source: ECHA (European Chemicals Agency) - Assessment: Not classified.

Skin corrosion / Irritation Rabbit - Method: OECD 404 - Source: ECHA (European Chemicals Agency) - Assessment: Slightly irritant.

Eye damage / irritation Rabbit - Method: OECD 403 - Source: ECHA (European Chemicals Agency) - Assessment: Slightly irritant.

Skin sensitisation Mouse lymphoma cells - Method: OECD 429 - Source: ECHA (European Chemicals Agency) - Assessment: Sensitising.

Specific target organ toxicity (repeated exposure) - Test: NOAEL(C) oral Rat = 50 mg/kg bw/day 98 d - Method: OECD 408 - Source: ECHA (European Chemicals Agency) - Assessment: Kidney toxicity.

Specific target organ toxicity (repeated exposure) dermal Mouse = 100 mg/kg bw/day 90 d - Method: OECD 411 - Source: ECHA (European Chemicals Agency) - Assessment: No systemic effect observed.

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations microorganisms in vitro mutagenicity Salmonella typhimurium Negative - Method: OECD 472 - Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations microorganisms in vitro mutagenicity Escherichia coli Negative - Method: OECD 472 - Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations microorganisms in vitro mutagenicity Mouse lymphoma cells Positive - Source: ECHA (European Chemicals Agency) - Assessment: Evidence for in vitro mutagenicity.

Germ cell mutagenicity / Genotoxicity in vivo mutagenicity - Source: ECHA (European Chemicals Agency) - Assessment: No experimental evidence of in vivo mutagenicity exist.

Carcinogenicity - Test: NOEL(C) dermal Mouse = 100 mg/kg bw/day - Method: OECD 453 - Source: ECHA (European Chemicals Agency) - Assessment: No carcinogenic.

Carcinogenicity - Test: NOAEL(C) oral Rat (male) = 15 mg/kg bw/day - Method: OECD 453 - Source: ECHA (European Chemicals Agency) - Assessment: No carcinogenic.

Carcinogenicity - Test: NOAEL(C) oral Rat (female) > 100 mg/kg bw/day - Method: OECD 453 - Source: ECHA (European Chemicals Agency) - Assessment: No carcinogenic.

Adverse effects on sexual function and fertility - Test: NOEL(C) oral Rat = 750 mg/kg bw/day 2 generation - Method: OECD 416 - Source: ECHA (European Chemicals Agency) - Assessment: No reprotoxic.

Adverse effects on developmental toxicity - Test: NOAEL(C) oral Rabbit > 180 - Method: OECD 414 - Source: ECHA (European Chemicals Agency) - Assessment: No reprotoxic.

Epoxy resin MW <= 700. - CAS: 28064-14-4

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Acute oral toxicity - Test: LD50 Rat > 4000 mg/kg - Source: Product supplier -
Assessment: Not classified.

Acute inhalation toxicity - Source: Product supplier - Notes: Not relevant

Acute dermal toxicity - Test: LC50 Rabbit > 2000 mg/kg - Source: Product supplier -
Assessment: Not classified.

Eye damage / irritation - Source: Product supplier - Assessment: Slightly irritant but not
relevant for classification.

Skin corrosion / Irritation - Source: Product supplier - Assessment: Slightly irritant but
not relevant for classification.

Skin sensitisation Guinea pig Positive - Source: Product supplier - Assessment:
Sensitising.

1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether - CAS: 2425-79-8

Acute oral toxicity - Test: LD50 Rat (male) = 1163 mg/kg - Method: OECD 401 -
Source: ECHA (European Chemicals Agency) - Assessment: Harmful.

Acute dermal toxicity - Test: LD50 Rat > 2150 mg/kg - Method: OECD 402 - Source:
ECHA (European Chemicals Agency) - Assessment: Not classified.

Skin corrosion / Irritation Rabbit 4 h - Method: OECD 404 - Source: ECHA (European
Chemicals Agency) - Assessment: Moderately irritant.

Eye damage / irritation Rabbit - Method: OECD 405 - Source: ECHA (European
Chemicals Agency) - Assessment: Risk of serious damage to eyes.

Skin sensitisation Guinea pig - Method: OECD 406 - Source: ECHA (European
Chemicals Agency) - Assessment: Sensitising.

Specific target organ toxicity (repeated exposure) - Test: NOAEL(C) oral Rat = 200
mg/kg 28 d - Method: OECD 407 - Source: ECHA (European Chemicals Agency)

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations mammalian cells in vitro
mutagenicity Hamster cells - Method: OECD 476 - Source: ECHA (European
Chemicals Agency) - Assessment: Positive (with metabolic activation / without
metabolic activation).

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations microorganisms in vitro
mutagenicity Salmonella typhimurium - Method: OECD 471 (Ames test) - Source:
ECHA (European Chemicals Agency) - Assessment: Positive (with metabolic activation
/ without metabolic activation).

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations mammalian cells in vitro
mutagenicity Hamster cells - Method: OECD 473 - Source: ECHA (European
Chemicals Agency) - Assessment: Positive (with metabolic activation / without
metabolic activation).

Germ cell mutagenicity / Genotoxicity in vivo mutagenicity Mouse - Method: OECD 474
- Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Mixture of 2-ethyl-4-methylimidazole-1-propionitrile and

2-ethyl-5-methylimidazole-1-propionitrile - CAS: 568591-00-4

Acute oral toxicity - Test: LD50 Rat > 300 mg/kg - Method: OECD 423 - Source: ECHA
(European Chemicals Agency) - Assessment: Harmful.

Skin corrosion / Irritation - Method: OECD 439 - Source: ECHA (European Chemicals
Agency) - Assessment: Not an irritant.

Eye damage / irritation - Method: OECD 492 - Source: ECHA (European Chemicals
Agency) - Assessment: Irritant.

Skin sensitisation - Method: OECD 442 - Source: ECHA (European Chemicals Agency)
- Assessment: Not sensitising.

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Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations mammalian cells oral - Method: OECD 471 (Ames test) - Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Specific target organ toxicity (repeated exposure) - Test: NOAEL(C) oral Rat = 50 mg/kg bw/day 28 d - Method: OECD 407 - Source: ECHA (European Chemicals Agency) - Assessment: Target organ: Thyroid.

2-Ethyl-4-méthylimidazole - CAS: 931-36-2

Acute oral toxicity - Test: LD50 Rat = 731 mg/kg - Method: OECD 401 - Source: ECHA (European Chemicals Agency) - Assessment: Harmful.

Acute inhalation toxicity - Test: LC50 Rat > 0.03 mg/l 8 h - Method: OECD 403 - Source: ECHA (European Chemicals Agency) - Assessment: Not classified.

Acute dermal toxicity - Test: LD50 Rabbit > 400 mg/kg - Method: OECD 402 - Source: ECHA (European Chemicals Agency) - Assessment: Not classified.

Skin corrosion / Irritation Rabbit - Method: OECD 404 - Source: ECHA (European Chemicals Agency) - Assessment: Irritant.

Eye damage / irritation Rabbit - Method: OECD 405 - Source: ECHA (European Chemicals Agency) - Assessment: Risk of serious damage to eyes.

Skin sensitisation - Method: OECD 429 - Source: ECHA (European Chemicals Agency) - Assessment: Sensitising.

Specific target organ toxicity (repeated exposure) - Test: NOAEL(C) Rat 150 mg/kg bw/day - Method: OECD 422 - Source: ECHA (European Chemicals Agency) - Assessment: Not classified.

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations microorganisms in vitro mutagenicity Salmonella typhimurium - Method: OECD 471 (Ames test) - Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations mammalian cells in vitro mutagenicity Hamster cells - Method: OECD 476 - Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Germ cell mutagenicity / Genotoxicity - Test: Gene-mutations mammalian cells in vitro mutagenicity Hamster cells - Method: OECD 487 - Source: ECHA (European Chemicals Agency) - Assessment: No mutagenic.

Adverse effects on sexual function and fertility - Test: NOAEL(C) oral Rat = 150 mg/kg - Method: OECD 422 - Source: ECHA (European Chemicals Agency) - Assessment:

No experimental evidence of effect on reproductive capacity.

SECTION 12: Ecological information

Except particular informations, the ecotoxicological effects of product are assessed by the conventional method described regulation (EC) 1272/2008 [CLP].

12.1. Toxicity

The product

Acute (short-term) fish toxicity - Test: LC50 < - mg/l: 10 mg/L - Duration: 96 h - Method: Estimation - Assessment: Toxic to fish.

Acute (short-term) daphnia toxicity - Test: CE50 < - mg/l: 15 mg/L - Duration: 48 h - Method: Estimation - Assessment: Harmful to daphnia.

Acute (short-term) algae toxicity - Test: CE50 < - mg/l: 5 mg/L - Duration: 72 h - Method: Estimation - Assessment: Toxic to algae

bis-[4-(2,3-epoxypropoxy)phenyl]propane - CAS: 1675-54-3

Acute (short-term) fish toxicity - Test: LC50 = - mg/l: 1.5 mg/L - Duration: 96 h - Species: *Oncorhynchus mykiss* (rainbow trout) - Method: OECD 203 - Source: ECHA (European Chemicals Agency) - Assessment: Toxic to fish.

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- Acute (short-term) daphnia toxicity - Test: CE50 = - mg/l: 1.7 mg/L - Duration: 48 h - Species: Daphnia magna (Big water flea) - Method: OECD 202 - Source: ECHA (European Chemicals Agency) - Assessment: Toxic to daphnia.
- Chronic (long-term) daphnia toxicity - Test: NOEC - mg/l: 0.3 mg/L - Duration: 21 d - Species: Daphnia magna (Big water flea) - Method: OECD 211 - Source: ECHA (European Chemicals Agency)
- Acute (short-term) algae toxicity - Test: LC50 = - mg/l: 9.4 mg/L - Duration: 72 h - Species: Scenedesmus capricornutum - Method: EPA Guideline 660/3-75-009 - Source: ECHA (European Chemicals Agency) - Assessment: Toxic to algae
- Respiratory inhibition of municipal activated sludge - Test: CE50 > - mg/l: 100 mg/L - Duration: 3 h - Source: ECHA (European Chemicals Agency)
- Epoxy resin MW <= 700. - CAS: 28064-14-4
- Acute (short-term) fish toxicity - Test: LC50 = - mg/l: 5.7 mg/L - Duration: 96 h - Species: Leuciscus idus (golden orfe) - Source: Product supplier - Assessment: Toxic to fish.
- Acute (short-term) daphnia toxicity - Test: CE50 = - mg/l: 3.5 mg/L - Duration: 48 h - Species: Daphnia magna (Big water flea) - Source: Product supplier - Assessment: Toxic to daphnia.
- 1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether - CAS: 2425-79-8
- Acute (short-term) fish toxicity - Test: LC50 = - mg/l: 19.8 mg/L - Duration: 96 h - Species: Brachydanio rerio (zebra-fish) - Method: OECD 203 - Source: ECHA (European Chemicals Agency) - Assessment: Harmful to fish.
- Acute (short-term) daphnia toxicity - Test: CE50 = - mg/l: 75 mg/L - Duration: 24 h - Species: Daphnia magna (Big water flea) - Method: OECD 202 - Source: ECHA (European Chemicals Agency) - Assessment: Harmful to daphnia.
- Acute (short-term) algae toxicity - Test: LC50 > - mg/l: 100 mg/L - Duration: 72 h - Species: Pseudokirchneriella subcapitata - Method: OECD 201 - Source: ECHA (European Chemicals Agency)
- Respiratory inhibition of municipal activated sludge - Test: IC50 = - mg/l: 13 mg/L - Duration: 3 h - Method: OECD 209 - Source: ECHA (European Chemicals Agency)
- Mixture of 2-ethyl-4-methylimidazole-1-propionitrile and 2-ethyl-5-methylimidazole-1-propionitrile - CAS: 568591-00-4
- Acute (short-term) daphnia toxicity - Test: CE50 = - mg/l: 99.9 mg/L - Duration: 48 h - Species: Daphnia magna (Big water flea) - Method: OECD 202 - Source: ECHA (European Chemicals Agency)
- Acute (short-term) algae toxicity - Test: CE50 = - mg/l: 65 mg/L - Duration: 72 h - Species: Pseudokirchneriella subcapitata - Method: OECD 201 - Source: ECHA (European Chemicals Agency) - Assessment: Harmful to algae.
- 2-Ethyl-4-méthylimidazole - CAS: 931-36-2
- Acute (short-term) fish toxicity - Test: LC50 < - mg/l: 68.1 mg/L - Duration: 96 h - Species: Leuciscus idus (golden orfe) - Method: DIN 38412 / part 15 - Source: ECHA (European Chemicals Agency) - Assessment: Harmful to fish.
- Acute (short-term) daphnia toxicity - Test: CE50 = - mg/l: 297 mg/L - Duration: 48 h - Species: Daphnia magna (Big water flea) - Method: Directive 79/831/EEC, annex V, part C - Source: ECHA (European Chemicals Agency)
- Acute (short-term) algae toxicity - Test: CE50 = - mg/l: 124.8 mg/L - Duration: 72 h - Species: Scenedesmus subspicatus - Method: DIN 38412 / part 9 - Source: ECHA (European Chemicals Agency) - Assessment: Harmful to algae.
- Respiratory inhibition of municipal activated sludge - Test: CE20 = - mg/l: 650 mg/L - Duration: 30 min - Method: OECD 209 - Source: ECHA (European Chemicals Agency)

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Overall evaluation:

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

The product

Biodegradation - Method: estimation - Assessment: Not readily biodegradable (according to OECD criteria).

bis-[4-(2,3-epoxypropoxy)phenyl]propane - CAS: 1675-54-3

Biodegradation - Test: O₂ consumption (closed bottle test) = - %: 5 - Duration: 28 d - Method: OECD 301F - Source: ECHA (European Chemicals Agency) - Assessment: Not readily biodegradable (according to OECD criteria).

Biodegradation - Test: DOC-decrease <= - %: 12 - Duration: 28 d - Method: OECD 301B - Source: ECHA (European Chemicals Agency) - Assessment: Not readily biodegradable (according to OECD criteria).

Epoxy resin MW <= 700. - CAS: 28064-14-4

Biodegradation - Test: CO₂ formation (% of the theoretical value) ca. - %: 13 - Duration: 28 d - Method: OECD 301B - Source: Product supplier - Assessment: Not readily biodegradable (according to OECD criteria).

1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether - CAS: 2425-79-8

Abiotic degradation in water - Test: Hydrolysis (pH = 4) = 116 h - Method: OECD 111 - Source: ECHA (European Chemicals Agency) - Notes: The statement is derived from products of similar structure or composition

Abiotic degradation in water - Test: Hydrolysis (pH = 7) = 96 h - Method: OECD 111 - Source: ECHA (European Chemicals Agency) - Notes: The statement is derived from products of similar structure or composition

Abiotic degradation in water - Test: Hydrolysis (pH = 9) = 171 h - Method: OECD 111 - Source: ECHA (European Chemicals Agency) - Notes: The statement is derived from products of similar structure or composition

Biodegradation - Test: DOC-decrease = - %: 38 - Duration: 28 d - Method: OECD 301E - Source: ECHA (European Chemicals Agency) - Assessment: Not readily biodegradable (according to OECD criteria).

Mixture of 2-ethyl-4-methylimidazole-1-propionitrile and

2-ethyl-5-methylimidazole-1-propionitrile - CAS: 568591-00-4

Biodegradation - Test: O₂ consumption (closed bottle test) = - %: 0 - Duration: 28 d - Method: OECD 301C - Source: ECHA (European Chemicals Agency) - Assessment: Not readily biodegradable (according to OECD criteria).

2-Ethyl-4-méthylimidazole - CAS: 931-36-2

Biodegradation >= - %: 80 - Duration: 28 d - Method: OECD 301A - Source: ECHA (European Chemicals Agency) - Assessment: Readily biodegradable (according to OECD criteria).

12.3. Bioaccumulative potential

bis-[4-(2,3-epoxypropoxy)phenyl]propane - CAS: 1675-54-3

Bioconcentration factor (BCF) <= 31 - Source: ECHA (European Chemicals Agency) - Notes: Calculation method: QSAR - Assessment: No indication of bioaccumulation potential.

Partition coefficient n-octanol/water (log Pow) = 3.24 - Source: ECHA (European Chemicals Agency) - Notes: Calculation method: QSAR - Assessment: Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

2-Ethyl-4-méthylimidazole - CAS: 931-36-2

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Partition coefficient n-octanol/water (log Pow) = 1.13 - Method: Calculated - Source: ECHA (European Chemicals Agency) - Assessment: Based on the n-octanol/water partition coefficient accumulation in organisms is not expected.

12.4. Mobility in soil

bis-[4-(2,3-epoxipropoxy)phenyl]propane - CAS: 1675-54-3

Transport soil-water - Test: Adsorption coefficient (log Kc) = 2.65 20 - Method: Calculation method: QSAR - Source: ECHA (European Chemicals Agency) - Assessment: Low mobility in the soil.

1,4-bis(2,3 epoxypropoxy)butane; butanedioldiglycidyl ether - CAS: 2425-79-8

Transport soil-water - Test: Adsorption coefficient (log Kc) = 1.1 - Method: OECD 121 - Source: ECHA (European Chemicals Agency)

Known or predicted distribution to environmental compartments:

bis-[4-(2,3-epoxipropoxy)phenyl]propane - CAS: 1675-54-3

Air (%): 0 - Water (%): 13.8 - Soil (%): 84.3 - Sediment (%): 1.9 - Method: Calculation according to Mackay, Level III - Source: ECHA (European Chemicals Agency)

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Endocrine disrupting properties

No endocrine disruptor substances present in concentration \geq 0.1%

12.7. Other adverse effects

The product does not contain organically bound halogen.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Appropriate disposal / Product

Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

Appropriate disposal / Package

Do not reuse packaging.

Send to authorised disposal plants. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information



14.1. UN number

ADR-UN Number: 3082

IATA-UN Number: 3082

IMDG-UN Number: 3082

14.2. UN proper shipping name

ADR-Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin MW \leq 700)

IATA-Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin MW \leq 700)

IMDG-Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin MW \leq 700)

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- 14.3. Transport hazard class(es)
ADR-Class: 9
ADR-Label: 9
ADR - Hazard identification number: 90
IATA-Class: 9
IATA-Label: 9
IMDG-Class: 9
IMDG-Class: 9
- 14.4. Packing group
ADR-Packing Group: III
IATA-Packing group: III
IMDG-Packing group: III
- 14.5. Environmental hazards
ADR-Environmental Pollutant: Yes
IMDG-Marine pollutant: Marine Pollutant
Most important toxic component: Epoxy resin MW <= 700
- 14.6. Special precautions for user
ADR-Subsidiary hazards: -
ADR-S.P.: 274 335 375 601
ADR-Transport category (Tunnel restriction code): 3 (-)
IATA-Passenger Aircraft: 964
IATA-Subsidiary hazards: -
IATA-Cargo Aircraft: 964
IATA-S.P.: A97 A158 A197 A215
IATA-ERG: 9L
IMDG-EmS: F-A , S-F
IMDG-Subsidiary hazards: -
IMDG-Stowage and handling: Category A
IMDG-Segregation: -
- 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
No

SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Volatile organic compounds (VOC) content in percent by weight: 0 %(calculated)
Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles - Annex XVII to Regulation (EC) No 1907/2006: No.
Water hazard class (WGK): Hazardous to water (WGK 2).
- 15.2. Chemical safety assessment
No

SECTION 16: Other information

- Full text of phrases referred to in Section 3:
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.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.

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H332 Harmful if inhaled.
 H318 Causes serious eye damage.
 H412 Harmful to aquatic life with long lasting effects.
 H373 May cause damage to organs through prolonged or repeated exposure.

Hazard class and hazard category	Code	Description
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1,1A,1B	3.4.2/1-1A-1B	Skin Sensitisation, Category 1,1A,1B
Skin Sens. 1B	3.4.2/1B	Skin Sensitisation, Category 1B
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Chronic 2	4.1/C2	Chronic (long term) aquatic hazard, category 2
Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Skin Irrit. 2, H315	Calculation method
Skin Sens. 1, H317	Calculation method
Eye Dam. 1, H318	Calculation method
Aquatic Chronic 2, H411	Calculation method

This document was prepared by a competent person who has received appropriate training. The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended. This MSDS cancels and replaces any preceding release.

Paragraphs modified from the previous revision: 9.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ATE: Acute Toxicity Estimate
 ATEmix: Acute toxicity Estimate (Mixtures)
 CAS: Chemical Abstracts Service (division of the American Chemical Society).
 CLP: Classification, Labeling, Packaging.
 DNEL: Derived No Effect Level.
 EINECS: European Inventory of Existing Commercial Chemical Substances.

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GefStoffVO: Ordinance on Hazardous Substances, Germany.
GHS: Globally Harmonized System of Classification and Labeling of Chemicals.
IATA: International Air Transport Association.
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO: International Civil Aviation Organization.
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG: International Maritime Code for Dangerous Goods.
INCI: International Nomenclature of Cosmetic Ingredients.
KSt: Explosion coefficient.
LC50: Lethal concentration, for 50 percent of test population.
LD50: Lethal dose, for 50 percent of test population.
PNEC: Predicted No Effect Concentration.
RID: Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWA: Time-weighted average
WGK: German Water Hazard Class.