

Safety Data Sheet DEFENDER



Safety Data Sheet dated 7/4/2021, version 7
Regulation (EU) 2015/830

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

1.1. Product identifier

Identification of the mixture:

Trade name: DEFENDER
Trade code: 613.259

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

Two-pack epoxy primer

1.3. Details of the supplier of the safety data sheet

Company:

BOERO BARTOLOMEO S.p.A. - Via Macaggi 19 - 16121 Genova - Tel. +39 010 55001 - Fax +39 010 5500305 - CF/P. IVA/REG. IMPRESE DI GENOVA 00267120103

Competent person responsible for the safety data sheet:

sicurezzaprodotti@boero.it

1.4. Emergency telephone number

Boero Bartolomeo S.p.A. - Tel.+39 010 55001

opening hours: Monday - Tuesday 9.00 am - 5.00 pm

UK: in an emergency the enquirer should call NHS 111/24/Direct (free-to-call medical helplines) or a doctor.

MALTA: tel. 112

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

Flam. Liq. 3, H226 Flammable liquid and vapour.

Skin Irrit. 2, H315 Causes skin irritation.

Eye Dam. 1, H318 Causes serious eye damage.

Skin Sens. 1, H317 May cause an allergic skin reaction.

STOT SE 3, H335 May cause respiratory irritation.

STOT RE 2, H373 May cause damage to organs through prolonged or repeated exposure.

Aquatic Chronic 2, H411 Toxic to aquatic life with long lasting effects.

2.2. Label elements

Hazard pictograms:



Danger

Hazard statements:

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

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H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/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.

P370+P378 In case of fire use CO₂ or chemical powder. Never use water.

P391 Collect spillage.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container according to local regulations.

Special Provisions:

PACK2 The packing must have tactile indications of danger for blind people.

EUH205 Contains epoxy constituents. May produce an allergic reaction.

Contains

xylene [4]

reaction product: bisphenol -A-epichloridrin (MW > 700)

2-methylpropan-1-ol; iso-butanol

hydrocarbons, C9, aromatics

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700): May produce an allergic reaction.

Hydrocarbons, C9-unsaturated, polymerized: May produce an allergic reaction.

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

None

2.3. Other hazards

Adverse physicochemical, human health and environmental effects:

The main adverse physical-chemical effects for human health and the environment are listed in accordance with Sections 9 to 12 of the safety data sheet

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

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

>= 15% - < 20% titanium dioxide

REACH No.: 01-2119489379-17-XXXX, CAS: 13463-67-7, EC: 236-675-5

Substance with a Union workplace exposure limit.

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>= 15% - < 20% xylene [4]

REACH No.: 01-2119488216-32-XXXX, CAS: 1330-20-7, EC: 215-535-7

Flam. Liq. 3 H226 Flammable liquid and vapour.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

>= 15% - < 20% reaction product: bisphenol -A-epichloridrin (MW > 700)

CAS: 25036-25-3

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1,1A,1B H317 May cause an allergic skin reaction.

>= 5% - < 7% reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)

REACH No.: 01-2119456619-26-XXXX, Index number: 603-074-00-8, CAS: 25068-38-6, EC: 500-033-5

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1,1A,1B H317 May cause an allergic skin reaction.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

>= 3% - < 5% trizinc bis(orthophosphate)

Index number: 030-011-00-6, CAS: 7779-90-0, EC: 231-944-3

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

>= 3% - < 5% 2-methylpropan-1-ol; iso-butanol

REACH No.: 01-2119484609-23-XXXX, Index number: 603-108-00-1, CAS: 78-83-1, EC: 201-148-0

Flam. Liq. 3 H226 Flammable liquid and vapour.

STOT SE 3 H335 May cause respiratory irritation.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Dam. 1 H318 Causes serious eye damage.

STOT SE 3 H336 May cause drowsiness or dizziness.

>= 2.5% - < 3% 1-methoxy-2-propanol; monopropylene glycol methyl ether

REACH No.: 01-2119457435-35-XXXX, Index number: 603-064-00-3, CAS: 107-98-2, EC: 203-539-1

Flam. Liq. 3 H226 Flammable liquid and vapour.

STOT SE 3 H336 May cause drowsiness or dizziness.

>= 2.5% - < 3% Hydrocarbons, C9-unsaturated, polymerized

REACH No.: 01-2119555292-40-XXXX, CAS: 71302-83-5, EC: 615-276-3

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Skin Sens. 1,1A,1B H317 May cause an allergic skin reaction.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

>= 1% - < 2.5% hydrocarbons, C9, aromatics

REACH No.: 01-2119455851-35-XXXX, EC: 918-668-5
Flam. Liq. 3 H226 Flammable liquid and vapour.
STOT SE 3 H335 May cause respiratory irritation.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.
STOT SE 3 H336 May cause drowsiness or dizziness.
Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.
DECLP (CLP)*

>= 0.1% - < 0.25% zinc oxide

REACH No.: 01-2119463881-32-XXXX, Index number: 030-013-00-7, CAS: 1314-13-2, EC: 215-222-5
Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

>= 0.05% - < 0.1% ethylbenzene

REACH No.: 01-2119489370-35-XXXX, Index number: 601-023-00-4, CAS: 100-41-4, EC: 202-849-4
Flam. Liq. 2 H225 Highly flammable liquid and vapour.
STOT RE 2 H373 May cause damage to organs (auditive organs) through prolonged or repeated exposure.
Acute Tox. 4 H332 Harmful if inhaled.
Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.

>= 0.01% - < 0.05% methyl methacrylate; methyl 2-methylprop-2-enoate; methyl 2-methylpropenoate

REACH No.: 01-2119452498-28-xxxx, Index number: 607-035-00-6, CAS: 80-62-6, EC: 201-297-1
Flam. Liq. 2 H225 Highly flammable liquid and vapour.
STOT SE 3 H335 May cause respiratory irritation.
Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1,1A,1B H317 May cause an allergic skin reaction.

*DECLP (CLP): Substance classified in accordance with Note P, Annex VI of EC Regulation (EC) 1272/2008. The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7). When the substance is not classified as a carcinogen at least the precautionary statements (P102-)P260-P262-P301 + P310-P331 (Table 3.1) or the S-phrases (2-)23-24-62 (Table 3.2) shall apply. This note applies only to certain complex oil-derived substances in Part 3.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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In case of Ingestion:

- Do NOT induce vomiting.
- Give nothing to eat or drink.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

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

Causes skin irritation.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire use CO₂ or chemical powder. Never use water.

Extinguishing media which must not be used for safety reasons:

Do not use water jets

None in particular.

5.2. Special hazards arising from the substance or mixture

Avoid inhaling the fumes.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains. Retain contaminated washing water and dispose it.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Provide adequate ventilation.

Use appropriate respiratory protection.

See protective measures under point 7 and 8.

6.2. Environmental precautions

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

Retain contaminated washing water and dispose it.

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

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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Avoid contact with skin and eyes, inhalation of vapours and mists.
Adequately ventilated premises.
Use localized ventilation system.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Always keep the containers tightly closed.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
None in particular.
Instructions as regards storage premises:
Cool and adequately ventilated.
Adequately ventilated premises.

7.3. Specific end use(s)

See section 1.2

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

titanium dioxide - CAS: 13463-67-7

EU - TWA(8h): 10 mg/m³

AGS - TWA(8h): 5 mg/m³

ACGIH - TWA(8h): 10 mg/m³ - Notes: A4 - LRT irr

MAK - STEL: 3 mg/m³

HRKGV I - Notes: 4 mg/m³ (R respirabilna prašina)

VLE1 - Notes: 10 mg/m³ (U ukupna prašina)

xylene [4] - CAS: 1330-20-7

EU - TWA(8h): 221 mg/m³, 50 ppm - STEL: 442 mg/m³, 100 ppm - Notes: Skin

AGS - TWA(8h): 221 mg/m³ - STEL((15 min)): 442 mg/m³ - Notes: (Anm. H: Ämnet kan lätt upptas genom huden)

ACGIH - TWA(8h): 100 ppm - STEL: 150 ppm - Notes: A4, BEI - URT and eye irr, CNS impair

AGS - TWA(8h): 221 mg/m³ - STEL((15 min)): 442 mg/m³ - Notes: (Anm. H: Ämnet kan lätt upptas genom huden)

VLE1 - TWA(8h): 211 mg/m³, 50 ppm

VLE - STEL: 442 mg/m³, 100 ppm - Notes: Skin

2-methylpropan-1-ol; iso-butanol - CAS: 78-83-1

ACGIH - TWA(8h): 50 ppm - Notes: Skin and eye irr

VLE1 - TWA: 154 mg/m³, 50 ppm

VLE - STEL: 231 mg/m³, 75 ppm

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

EU - TWA(8h): 375 mg/m³, 100 ppm - STEL: 563 mg/m³, 150 ppm - Notes: Skin

ACGIH - TWA(8h): 50 ppm - STEL: 100 ppm - Notes: A4 - Eye and URT irr

hydrocarbons, C9, aromatics

EU - STEL: 100 mg/m³, 20 ppm

AGS - TWA(8h): 250-350 mg/m³

zinc oxide - CAS: 1314-13-2

ACGIH - TWA(8h): 2 mg/m³ - STEL: 10 mg/m³ - Notes: (R) - Metal fume fever

VLE1 - TWA: 5 mg/m³

VLE - STEL: 10 mg/m³

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ethylbenzene - CAS: 100-41-4

EU - TWA(8h): 442 mg/m³, 100 ppm - STEL: 884 mg/m³, 200 ppm - Notes: Skin

AGS - TWA(8h): 200 mg/m³ - STEL((15 min)): 450 mg/m³

ACGIH - TWA(8h): 20 ppm - Notes: A3, BEI - URT irr, kidney dam (nephropathy), cochlear impair

VLE1 - TWA(8h): 442 mg/m³, 100 ppm

VLE - STEL: 884 mg/m³, 200 ppm

methyl methacrylate; methyl 2-methylprop-2-enoate; methyl 2-methylpropenoate - CAS: 80-62-6

EU - TWA(8h): 50 ppm - STEL: 100 ppm

ACGIH - TWA(8h): 50 ppm - STEL: 100 ppm - Notes: DSEN, A4 - URT and eye irr, body weight eff, pulm edema

DNEL Exposure Limit Values

titanium dioxide - CAS: 13463-67-7

Worker Industry: 10 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, local effects

Consumer: 700 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

xylene [4] - CAS: 1330-20-7

Worker Industry: 289 mg/m³ - Consumer: 174 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Worker Industry: 289 mg/m³ - Consumer: 174 mg/m³ - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Industry: 180 mg/kg - Consumer: 108 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Industry: 77 mg/m³ - Consumer: 14.8 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Consumer: 1.6 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) - CAS: 25068-38-6

Worker Industry: 8.3 mg/kg - Exposure: Human Dermal - Frequency: Short Term, systemic effects

Worker Industry: 8.3 mg/kg - Exposure: Human Inhalation - Frequency: Short Term, systemic effects

Consumer: 0.75 mg/kg - Exposure: Human Oral - Frequency: Short Term, systemic effects

Consumer: 0.75 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Consumer: 3.571 mg/kg - Exposure: Human Dermal - Frequency: Short Term, systemic effects

trizinc bis(orthophosphate) - CAS: 7779-90-0

Worker Industry: 5 mg/m³ - Consumer: 2.5 mg/m³ - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Industry: 83 mg/kg - Consumer: 83 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Consumer: 0.83 mg/kg - Exposure: Human Oral - Frequency: Long Term (repeated)

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

Consumer: 3.3 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

Worker Professional: 369 ppm - Consumer: 43.9 ppm - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

Worker Professional: 50.6 mg/kg - Consumer: 18.1 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

hydrocarbons, C9, aromatics

Worker Industry: 25 mg/kg - Consumer: 11 mg/kg - Exposure: Human Dermal -

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Frequency: Long Term, systemic effects

Worker Industry: 150 mg/m³ - Consumer: 32 mg/m³ - Exposure: Human Inhalation -

Frequency: Long Term, systemic effects

Consumer: 11 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

titanium dioxide - CAS: 13463-67-7

Target: Marine water - Value: 1 mg/L

Target: Fresh Water - Value: 0.127 mg/L

Target: Microorganisms in sewage treatments - Value: 100 mg/L

Target: Marine water sediments - Value: 100 mg/kg

Target: Freshwater sediments - Value: 1000 mg/kg

xylene [4] - CAS: 1330-20-7

Target: Fresh Water - Value: 0.327 mg/L

Target: Marine water - Value: 0.327 mg/L

Target: Freshwater sediments - Value: 12.46 mg/kg

Target: Marine water sediments - Value: 12.46 mg/kg

Target: Microorganisms in sewage treatments - Value: 6.58 mg/L

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) - CAS: 25068-38-6

Target: Freshwater sediments - Value: 0.5 mg/kg

Target: Marine water sediments - Value: 0.5 mg/kg

Target: Fresh Water - Value: 0.006 mg/L

Target: Marine water - Value: 0.0996 mg/kg

Target: Microorganisms in sewage treatments - Value: 10 mg/L

trizinc bis(orthophosphate) - CAS: 7779-90-0

Target: Fresh Water - Value: 0.0206 mg Zn/L

Target: Marine water - Value: 0.0061 mg Zn/L

Target: Freshwater sediments - Value: 117.8 mg Zn/Kg

Target: Marine water sediments - Value: 56.5 mg Zn/Kg

Target: Soil (agricultural) - Value: 35.6 mg Zn/Kg

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

Target: Fresh Water - Value: 10 mg/L

Target: Freshwater sediments - Value: 41.6 mg/kg

Target: Marine water sediments - Value: 4.17 mg/kg

Target: Microorganisms in sewage treatments - Value: 100 mg/L

Target: Soil (agricultural) - Value: 2.47 mg/kg

Biological Exposure Index

xylene [4] - CAS: 1330-20-7

Value: 1.50 mg/L - medium: Blood - Sampling Period: End of turn

Value: 1.50 gg creatinina - medium: Blood - Sampling Period: End of turn

ethylbenzene - CAS: 100-41-4

Value: 1.50 mg/L - medium: Blood - Sampling Period: DU

Value: 2 ppm - medium: Air at the end of exhalation - Sampling Period: A

Value: 1.50 gg creatinina - medium: Urine - Biological Indicator: 78 - Sampling Period: End of turn; End of working week

8.2. Exposure controls

Eye protection:

Use goggles/face mask certified UNI EN 166.

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

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Suitable protective clothing is required for complete skin protection: for example coveralls with long sleeves and trousers, rubber boots and apron, etc., according to UNI EN 14325.

Protection for hands:

Use protective gloves: waterproof rubber gloves certified UNI EN 374. Nitrile gloves provide good protection. Use care in selecting a penetration time of the gloves longer than the foreseen usage time.

Respiratory protection:

Use adequate protective respiratory equipment: a carbon filter mask with filters certified UNI EN 149 or dust masks certified UNI EN 140. Filters of types A and P types may be considered.

Use respiratory protection where ventilation is insufficient or exposure is prolonged.

Thermal Hazards:

None

Environmental exposure controls:

See sections 6 and 13

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance :	liquid
Odour:	N.A.
Colour:	grey
pH:	N.A.
Melting point / freezing point:	N.A.
Boiling point (°C):	bp>35 °C
Initial boiling point and boiling range:	N.A.
Solid/gas flammability:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density:	N.A.
Flash point:	24 °C
Evaporation rate:	N.A.
Vapour pressure:	N.A.
Specific gravity (Kg/L) 20°C :	1.4734
Methodology: SPECIFIC WEIGHT BY MEANS OF PICNOMETER (gr / cm3).	
Solubility in water:	N.A.
Lipid solubility:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
Kinematic viscosity at 40°C (mm ² /s):	kv > 20,5
Viscosity (23°C±0.5°C): min 10000 - max 15000	
Methodology: BROOKFIELD (cP)	
Spindle: 6	
Speed (rpm): 10	

9.2. Other information

No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

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- 10.2. Chemical stability
Stable under normal conditions
- 10.3. Possibility of hazardous reactions
None
- 10.4. Conditions to avoid
Stable under normal conditions.
- 10.5. Incompatible materials
Avoid contact with combustible materials. The product could catch fire.
- 10.6. Hazardous decomposition products
None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:

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- a) acute toxicity
Not classified
Based on available data, the classification criteria are not met
- b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
- c) serious eye damage/irritation
The product is classified: Eye Dam. 1 H318
- d) respiratory or skin sensitisation
The product is classified: Skin Sens. 1 H317
- e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
- f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met
- g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met
- h) STOT-single exposure
The product is classified: STOT SE 3 H335
- i) STOT-repeated exposure
The product is classified: STOT RE 2 H373
- j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

titanium dioxide - CAS: 13463-67-7

a) acute toxicity:

Test: LD50 - Route: oral - Species: rat > 10.000 mg/kg

xylene [4] - CAS: 1330-20-7

a) acute toxicity:

Test: LD50 - Route: oral - Species: rat > 3523 mg/kg

Test: LD50 - Route: dermal - Species: rabbit > 2000 mg/kg

Test: LC50 - Route: inhalation - Species: rat > 27.571 mg/l - Duration: 4h

b) skin corrosion/irritation:

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- Test: Skin Irritant Positive
- c) serious eye damage/irritation:
Test: Eye Irritant Positive
- reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) - CAS: 25068-38-6
- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat > 2000 mg/kg
Test: LD50 - Route: oral - Species: rat > 5000 mg/kg
Test: LD50 - Route: dermal - Species: rat > 2000 mg/kg
- trizinc bis(orthophosphate) - CAS: 7779-90-0
- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat > 5000 mg/kg
Test: LC50 - Route: inhalation - Species: rat > 5.7 mg/l
- 2-methylpropan-1-ol; iso-butanol - CAS: 78-83-1
- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat > 2830 mg/kg
Test: LD50 - Route: dermal - Species: rabbit > 2000 mg/kg
Test: LC50 - Route: inhalation - Species: rat = 24.6 mg/l - Duration: 4h
- b) skin corrosion/irritation:
Test: Skin Irritant - Species: rabbit
- c) serious eye damage/irritation:
Test: Eye Corrosive - Species: rabbit
- 1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2
- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat = 4.016 mg/kg
Test: LD50 - Route: dermal - Species: rabbit > 2000 mg/kg
Test: LC50 - Route: inhalation of vapours - Species: rat > 25.8 mg/l - Duration: 18207.6h
- hydrocarbons, C9, aromatics
- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat > 3492 mg/kg
Test: LD50 - Route: dermal - Species: rat > 3160 mg/kg
Test: LC50 - Route: inhalation - Species: rat > 6193 mg/m³ - Duration: 4h
- zinc oxide - CAS: 1314-13-2
- a) acute toxicity:
Test: LD50 - Route: oral - Species: rat = 15000 mg/kg
Test: LC50 - Route: inhalation - Species: rat > 5.7 mg/l
- ethylbenzene - CAS: 100-41-4
- a) acute toxicity:
Test: LC50 - Route: inhalation - Species: rat = 17.2 mg/l - Duration: 4h

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

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The product is classified: Aquatic Chronic 2 - H411

titanium dioxide - CAS: 13463-67-7

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96 - Notes: OECD 203

Endpoint: LC50 - Species: Daphnia > 100 mg/l - Duration h: 48 - Notes: OECD 202

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xylene [4] - CAS: 1330-20-7

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 2.6 ml/l - Duration h: 96

Endpoint: EC50 - Species: Algae = 2.2 mg/l - Duration h: 72

b) Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish > 1.3 mg/l - Notes: 56 d

Endpoint: NOEC - Species: Daphnia = 0.74 mg/l - Notes: 7 d

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight <= 700)
- CAS: 25068-38-6

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 1.3 mg/l - Duration h: 96 - Notes: OECD 203

Endpoint: EC50 - Species: Daphnia = 2.1 mg/l - Duration h: 48 - Notes: OECD 202

Endpoint: LC50 - Species: Algae = 11 mg/l - Duration h: 72

trizinc bis(orthophosphate) - CAS: 7779-90-0

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 0.33-6.0 mg/l - Duration h: 96

Endpoint: EC50 - Species: Algae = 0.30 mg/l - Duration h: 72 - Notes: OECD 201

2-methylpropan-1-ol; iso-butanol - CAS: 78-83-1

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 1430 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 1100 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae = 1799 mg/l - Duration h: 72

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish > 100 mg/l - Duration h: 96

Endpoint: LC50 - Species: Daphnia > 100 mg/l - Duration h: 48

Endpoint: EC50 - Species: Algae > 100 mg/l - Duration h: 72

hydrocarbons, C9, aromatics

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish = 9.2 mg/l - Duration h: 96

Endpoint: EC50 - Species: Daphnia = 3.2 mg/l - Duration h: 48

Endpoint: NOEC - Species: Algae = 1 mg/l - Duration h: 72

Endpoint: EC50 - Species: Algae = 2.9 mg/l - Duration h: 72

zinc oxide - CAS: 1314-13-2

a) Aquatic acute toxicity:

Endpoint: EC50 - Species: Daphnia = 0.67 mg/l - Duration h: 48

Endpoint: EC50 = 0.21 mg/l - Duration h: 72

12.2. Persistence and degradability

There is no data available on the preparation itself.

xylene [4] - CAS: 1330-20-7

Biodegradability: Readily biodegradable - Notes: solubilità in acqua=146 mg/l

2-methylpropan-1-ol; iso-butanol - CAS: 78-83-1

Biodegradability: Readily biodegradable - %: 90 - Notes: 14 d

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

Biodegradability: Readily biodegradable - Test: Dissolved organic carbon - %: 96 - Notes: 28 d

hydrocarbons, C9, aromatics

Biodegradability: Readily biodegradable - %: 78 - Notes: 28 d

12.3. Bioaccumulative potential

There is no data available on the preparation itself.

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xylene [4] - CAS: 1330-20-7

Test: Kow - Partition coefficient 3.2 - Notes: mg/l

Test: BCF - Bioconcentration factor 25.9 - Notes: mg/l

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

Bioaccumulation: Not bioaccumulative - Test: BCF - Bioconcentration factor - Notes: <2
hydrocarbons, C9, aromatics

Test: Kow - Partition coefficient 1.2

ethylbenzene - CAS: 100-41-4

Test: Kow - Partition coefficient 3.6

12.4. Mobility in soil

There is no data available on the preparation itself.

xylene [4] - CAS: 1330-20-7

Test: Koc 2.73 - Notes: mg/l

1-methoxy-2-propanol; monopropylene glycol methyl ether - CAS: 107-98-2

Mobility in soil: Mobile - Test: Koc 0.2-1.0

zinc oxide - CAS: 1314-13-2

Test: Koc 158.5 - Notes: l/kg

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.
Directives 91/156/CEE, 91/689/CEE, 94/62/CE.

EWC CODE 080111

Do not empty into drains, ground or waterways. Dispose of product residues and related containers at a collection point for hazardous or special waste or, where appropriate, through an authorized waste disposal company.

SECTION 14: Transport information

14.1. UN number

UN 1263

14.2 Proper shipping name: Paint.

14.3 Transport hazard class(es) and Packing Group:

3 PG III

14.4. Environmental hazards

Marine Pollutant: Yes

14.5. Special precautions for user

None

Other informations

Land transport ADR/RID

ADR Classification code: F1

Maximum quantity for Limited Quantities: 5L/Kg

Tunnel code :D/E

Transport category: 3

Maritime transport (IMDG)

Maximum quantity for Limited Quantities: 5L/Kg

EmS number: F-E/S-E

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Stowage provisions: A
 Air transport(IATA/ICAO)
 Maximum quantity for Limited Quantities: 5L/Kg
 Pkg. inst. passenger and cargo aircraft: 309
 Pkg. inst. cargo aircraft only: 310
 Erg-code: 3L

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
 Dir. 89/391/CEE and subsequent amendments (Risks related to chemical agents at work and Occupational exposure limit values). Directive 1999/13/EC and subsequent amendments (limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations). Regulation (CE) n. 1907/2006 , Regulation (CE) 830/2015 and subsequent amendments (concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals - REACH). Regulation (CE) n.1272/2008 and subsequent amendments (on classification, labeling and packaging of substances and mixtures - CLP).
 International Maritime Dangerous Goods Code, IATA Dangerous Goods Regulation, International Carriage of Dangerous Goods by Road (ADR).

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restriction 3 is not applicable because the mixture does not fall within the restrictions mentioned in Annex XVII of EC Regulation No. 1907/2006.

Restriction 40 is not applicable because the mixture does not fall within the restrictions mentioned in Annex XVII of EC Regulation No. 1907/2006.

Where applicable, refer to the following regulatory provisions :

Directive 2004/42/CE on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products.

Regulation UE No 649/2012 concerning the export and import of dangerous chemicals.

Regulation UE n. 528/2012 concerning the making available on the market and use of biocidal products.

Directive 2012/18/EU (Seveso III)

Regulation (EC) No. 648/2004 (detergents).

Directive 2004/42/CE on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products.

Regulation (EC) No 689/2006 concerning the export and import of dangerous chemicals.

Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

Product belongs to category: P5c, E2

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Hazard class and hazard category	Code	Description
Flam. Liq. 2	2.6/2	Flammable liquid, Category 2

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Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Asp. Tox. 1	3.10/1	Aspiration hazard, Category 1
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
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
STOT RE 2	3.9/2	Specific target organ toxicity - repeated exposure, Category 2
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1
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

Paragraphs modified from the previous revision:

SECTION 9: Physical and chemical properties

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
Flam. Liq. 3, H226	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method
STOT RE 2, H373	Calculation method

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Aquatic Chronic 2, H411	Calculation method
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This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

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.

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.
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.