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

1.1. Product identifier

Mixture identification:

Trade name: FASSADVANCE PROTECTION
Trade code: COL520
UFI: UNE1-40FS-G00K-N34Y

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

Recommended use: Protective filling finish

1.3. Details of the supplier of the safety data sheet

Company: FASSA Srl
Via Lazzaris, 3 - 31027 Spresiano (TV) - Italy
Tel. +39 0422 7222
Fax +39 0422 887509

Imported in the UK:
FASSA UK LTD
Ashchurch Business Centre,
Alexandra Way, Ashchurch, Tewkesbury GL20 8TD- UK
Tel. +44 (0) 1684.212272

Responsable: laboratorio.spresiano@fassabortolo.it

1.4. Emergency telephone number

NHS 111

SECTION 2: Hazards identification



2.1. Classification of the substance or mixture

Regulation (EC) n. 1272/2008 (CLP)

Skin Sens. 1 May cause an allergic skin reaction.

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

Adverse physicochemical, human health and environmental effects:
No other hazards

2.2. Label elements

Regulation (EC) No 1272/2008 (CLP):

Hazard pictograms and Signal Word



Warning

Hazard statements

H317 May cause an allergic skin reaction.

H412 Harmful 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.

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

P280 Wear protective gloves/clothing.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P501 Dispose of contents/container in accordance with national regulation.

Special Provisions:

EUH211 Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.

Contains:

1,2-benzisothiazol-3(2H)-one

2-octyl-2H-isothiazol-3-one

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

2-methylisothiazol-3(2H)-one

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

None.

The product has been classified according to Regulation (EC) No 1272/2008 (CLP) as amended by UK CLP Regulation, UK SI 2019/720 and UK SI 2020/1567.

2.3. Other hazards

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

Contains biocides. For fungicidal and algaecidal property for films: 2-octyl-2H-isothiazol-3-one, pyrithione zinc, Terbutryn.

Contains biocide. For storage preservation: reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

Contains biocide. For storage preservation: 1,2-benzisothiazol-3(2H)-one

Contains biocide. For storage preservation: 2-methylisothiazol-3(2H)-one

Refer to section 8.1 for information on the crystalline silica, quartz (respirable fraction)

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Mixture identification: FASSADVANCE PROTECTION

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

Qty	Name	Ident. Numb.	Classification	Registration Number:
≥20 - <30 %	titanium dioxide	CAS:13463-67-7 EC:236-675-5 Index:022-006-00-2	Carc. 2, H351	01-2119489379-17-xxxx
≥1 - <3 %	Silica crystalline, quartz (respirable fraction)	CAS:14808-60-7 EC:238-878-4	STOT RE 1, H372	Exempted
≥1 - <3 %	2-(2-butoxyethoxy)ethanol	CAS:112-34-5 EC:203-961-6 Index:603-096-00-8	Eye Irrit. 2, H319	01-2119475104-44-xxxx
≥0.5 - <1 %	Polyethylene glycol monooleyl ether	CAS:9004-98-2	Skin Irrit. 2, H315; Aquatic Acute 1, H400	Exempted
≥0.1 - <0.3 %	Silica crystalline, cristobalite (respirable fraction)	CAS:14464-46-1 EC:238-455-4	STOT RE 1, H372	Exempted
≥0.1 - <0.3 %	Propylidynetrimethanol	CAS:77-99-6 EC:201-074-9	Repr. 2, H361fd	01-2119486799-10-xxxx
≥0.0036 - <0.036 %	1,2-benzisothiazol-3(2H)-one	CAS:2634-33-5 EC:220-120-9 Index:613-088-00-6	Acute Tox. 2, H330 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:1 Specific Concentration Limits: C ≥ 0.036%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 450mg/kg bw ATE - Inhalation (Dust/mist): 0.21mg/l	
≥0.005 - <0.025 %	pyrithione zinc	CAS:13463-41-7 EC:236-671-3 Index:613-333-00-7	Acute Tox. 2, H330 Acute Tox. 3, H301 Eye Dam. 1, H318 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Repr. 1B,	

			H360D, M-Chronic:10, M-Acute:1000 Acute Toxicity Estimate: ATE - Oral: 221mg/kg bw ATE - Inhalation (Dust/mist): 0.14mg/l
≥0.005 - <0.025 %	Terbutryn	CAS:886-50-0 EC:212-950-5	Acute Tox. 4, H302 Skin Sens. 1B, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 PMT, EUH450, M-Chronic:100, M-Acute:100 Specific Concentration Limits: C ≥ 3%: Skin Sens. 1B H317 Acute Toxicity Estimate: ATE - Oral: 500mg/kg bw
≥0.0015 - <0.005 %	2-octyl-2H-isothiazol-3-one	CAS:26530-20-1 EC:247-761-7 Index:613-112-00-5	Acute Tox. 3, H311 Acute Tox. 3, H301 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Skin Sens. 1A, H317 Skin Corr. 1, H314 Acute Tox. 2, H330, M-Chronic:100, M-Acute:100, EUH071 Specific Concentration Limits: C ≥ 0.0015%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 125mg/kg bw ATE - Dermal: 311mg/kg bw ATE - Inhalation (Dust/mist): 0.27mg/l
≥0.00015 - <0.0015 %	reaction mass of 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	CAS:55965-84-9 Index:613-167-00-5	Acute Tox. 2, H310 Acute Tox. 2, H330 Acute Tox. 3, H301 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410, M-Chronic:100, M-Acute:100, EUH071 Specific Concentration Limits: C ≥ 0.6%: Skin Corr. 1C H314 0.06% ≤ C < 0.6%: Skin Irrit. 2 H315 C ≥ 0.6%: Eye Dam. 1 H318 0.06% ≤ C < 0.6%: Eye Irrit. 2 H319 C ≥ 0.0015%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 64mg/kg bw ATE - Dermal: 92.4mg/kg bw ATE - Inhalation (Dust/mist): 0.17mg/l
≥0.00015 - <0.0015 %	2-methylisothiazol-3(2H)-one	CAS:2682-20-4 EC:220-239-6 Index:613-326-00-9	Acute Tox. 2, H330 Acute Tox. 3, H301 Acute Tox. 3, H311 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410, M-Chronic:1, M-Acute:10, EUH071 Specific Concentration Limits: C ≥ 0.0015%: Skin Sens. 1A H317 Acute Toxicity Estimate: ATE - Oral: 167mg/kg bw ATE - Dermal: 242mg/kg bw ATE - Inhalation (Dust/mist): 0.11mg/l

The mixture contains >= 1% titanium dioxide CAS 13463-67-7 [in powder form containing >= 1 % of particles with aerodynamic diameter <= 10 µm]. Substance is classified as a category 2 inhalation carcinogenic (H351 inhalation) - Notes V,W,10. According to Regulation (EC) no. 1272/2008 (CLP), Annex II, part 2 , section 2.12, the label on the packaging of liquid mixtures containing >= 1 % titanium dioxide particles with an aerodynamic diameter equal to or below 10 µm shall bear the following statement: EUH211: "Warning! Hazardous respirable droplets may be formed on vaporization. Do not breathe vapours or mist."

Classifications according to Regulation (EC) No 1272/2008 (CLP) as amended by UK CLP Regulation, UK SI 2019/720 and UK SI 2020/1567.

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Remove contaminated clothing immediatley 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.

In case of Ingestion:

Do not induce vomiting, get medical attention showing the SDS and label hazardous.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

The symptoms and effects are as expected from the hazards as shown in section 2.

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).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Product is not flammable.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Burning produces heavy smoke.

In the event of fire and/or explosion do not breathe fumes.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

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

For non emergency personnel:

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

For emergency responders:

Wear personal protection equipment.

6.2. Environmental precautions

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

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

6.3. Methods and material for containment and cleaning up

Material suitable for collection: inert absorbent material (e.g. sand, vermiculite)

After the product has been recovered, rinse the area and materials involved with water.

Retain contaminated washing water and dispose it.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

Don't use empty container before they have been cleaned.

Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

Advice on general occupational hygiene:

Contamined 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

Keep container tightly closed in a cool, well-ventilated place, away from heat.

Keep away from food, drink and feed.

Incompatible materials:

See chapter 10.5

Instructions as regards storage premises:

Adequately ventilated premises.

Protect from frost.

7.3. Specific end use(s)

Recommendation(s)

See chapter 1.2

Industrial sector specific solutions:

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Community Occupational Exposure Limits (OEL)

titanium dioxide

CAS: 13463-67-7	OEL Type	ACGIH		Long Term: 0.2 mg/m3 Notes: Nanoscale particles - A3 - (R) URT irr, Pneumoconiosis
				Long Term: 2.5 mg/m3 Notes: Finescale particles - A3 - (R) URT irr, Pneumoconiosis
	OEL Type	MAK	AUSTRIA	Long Term: 5 mg/m3; Short Term: 10 mg/m3 Notes: Respirable fraction
	OEL Type	MAK	GERMANY	Long Term: 0.3 mg/m3; Short Term: 2.4 mg/m3 Notes: Respirable fraction, except ultrafine particles , Multiplied by the material density
	OEL Type	VLEP	BELGIUM	Long Term: 10 mg/m3
	OEL Type	VLEP	FRANCE	Long Term: 11 mg/m3 Notes: Inhalable aerosol
	OEL Type	VLEP	ROMANIA	Long Term: 10 mg/m3; Short Term: 15 mg/m3
	OEL Type	TLV	BULGARIA	Long Term: 10 mg/m3
	OEL Type	VLA	SPAIN	Long Term: 10 mg/m3 Notes: Inhalable fraction
	OEL Type	SUVA	SWITZERLAND	Long Term: 3 mg/m3 Notes: Respirable aerosol
	OEL Type	WEL	U.K.	Long Term: 10 mg/m3 Notes: Inhalable fraction
				Long Term: 4 mg/m3 Notes: Respirable fraction
	OEL Type	GVI	CROATIA	Long Term: 10 mg/m3 Notes: Inhalable fraction
				Long Term: 4 mg/m3 Notes: Respirable fraction
	OEL Type	NDS	POLAND	Long Term: 10 mg/m3 Notes: Inhalable fraction
	OEL Type	IPRV	LITHUANIA	Long Term: 5 mg/m3
	OEL Type	RV	LATVIA	Long Term: 10 mg/m3
	OEL Type	NGV/KGV	SWEDEN	Long Term: 5 mg/m3 Notes: inhalable aerosol

Silica crystalline, quartz (respirable fraction)

CAS: 14808-60-7	OEL Type	ACGIH		Long Term: 0.025 mg/m3 Notes: (R), A2 - Pulm fibrosis, lung cancer
	OEL Type	EU		Long Term: 0.1 mg/m3

				Notes: Respirable dust particles
	OEL Type	MAK	AUSTRIA	Long Term: 0.05 mg/m3 Notes: Respirable fraction
	OEL Type	VLEP	BELGIUM	Long Term: 0.1 mg/m3 Notes: Respirable dust; Additional indication "C" means that the agent falls within the scope of Title 2 concerning carcinogenic, mutagenic and reprotoxic agents of Book VI of the Codex on well-being at work.
	OEL Type	VLEP	FRANCE	Long Term: 0.1 mg/m3 Notes: Respirable fraction
	OEL Type	VLEP	ITALY	Long Term: 0.1 mg/m3 Notes: Respirable dust particles
	OEL Type	VLA	SPAIN	Long Term: 0.05 mg/m3 Notes: Respirable fraction
	OEL Type	ÁK	HUNGARY	Long Term: 0.1 mg/m3 Notes: Respirable fraction
	OEL Type	MAC	NETHERLANDS	Long Term: 0.075 mg/m3 Notes: Respirable fraction
	OEL Type	SUVA	SWITZERLAND	Long Term: 0.15 mg/m3 Notes: Respirable aerosol
	OEL Type	GVI	CROATIA	Long Term: 0.1 mg/m3
	OEL Type	AGW	GERMANY	Long Term: 0.05 mg/m3; Short Term: 0.4 mg/m3 Notes: Respirable fraction
	OEL Type	NDS	POLAND	Long Term: 0.1 mg/m3 Notes: Respirable fraction
	OEL Type	MV	SLOVENIA	Long Term: 0.15 mg/m3
	OEL Type	IPRV	LITHUANIA	Long Term: 0.1 mg/m3
	OEL Type	NGV/KGV	SWEDEN	Long Term: 0.1 mg/m3 Notes: Respirable fraction

2-(2-butoxyethoxy)ethanol

CAS: 112-34-5	OEL Type	ACGIH		Long Term: 10 ppm Notes: (IFV) - Hematologic, liver and kidney eff
	OEL Type	EU		Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	MAK	AUSTRIA	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	MAK	GERMANY	Long Term: 67 mg/m3 - 10 ppm; Short Term: 100.5 mg/m3 - 15 ppm Notes: Inhalable aerosol and vapour
	OEL Type	VLEP	BELGIUM	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	VLEP	FRANCE	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	VLEP	ITALY	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	VLEP	ROMANIA	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	TLV	BULGARIA	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	TLV	CZECHIA	Long Term: 70 mg/m3 - 10.36 ppm; Short Term: 100 mg/m3 - 14.8 ppm Notes: Skin
	OEL Type	VLA	SPAIN	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	ÁK	HUNGARY	Long Term: 67.5 mg/m3; Short Term: 101.2 mg/m3
	OEL Type	MAC	NETHERLANDS	Long Term: 50 mg/m3 - 7.4 ppm; Short Term: 100 mg/m3 - 14.8 ppm Notes: Skin
	OEL Type	VLE	PORTUGAL	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	SUVA	SWITZERLAND	Long Term: 67 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	WEL	U.K.	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	GVI	CROATIA	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	AGW	GERMANY	Long Term: 67 mg/m3 - 10 ppm; Short Term: 100 mg/m3 - 15 ppm Notes: Inhalable aerosol and vapour
	OEL Type	NDS	POLAND	Long Term: 67 mg/m3; Short Term: 100 mg/m3

	OEL Type	MV	SLOVENIA	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm
	OEL Type	IPRV	LITHUANIA	Long Term: 67.5 mg/m3 - 10 ppm; Short Term: 101.2 mg/m3 - 15 ppm

Silica crystalline, cristobalite (respirable fraction)

CAS: 14464-46-1	OEL Type	ACGIH		Long Term: 0.025 mg/m3 Notes: (R), A2 - Pulm fibrosis, lung cancer
	OEL Type	ACGIH	LATVIA	Long Term: 0.025 mg/m3
	OEL Type	ACGIH	SWEDEN	Long Term: 0.025 mg/m3
	OEL Type	EU		Long Term: 0.1 mg/m3

Propylidynetrimethanol

CAS: 77-99-6	OEL Type	ACGIH	Long Term: 0.5 ppm Notes: Inhalable fraction and vapour

2-octyl-2H-isothiazol-3-one

CAS: 26530-20-1	OEL Type	MAK	AUSTRIA	Long Term: 0.05 mg/m3; Short Term: 0.1 mg/m3 Notes: Inhalable aerosol
	OEL Type	MAK	GERMANY	Long Term: 0.05 mg/m3; Short Term: 0.1 mg/m3 Notes: Inhalable fraction, Skin
	OEL Type	SUVA	SWITZERLAND	Long Term: 0.05 mg/m3; Short Term: 0.1 mg/m3 Notes: Inhalable aerosol
	OEL Type	AGW	GERMANY	Long Term: 0.05 mg/m3; Short Term: 0.1 mg/m3 Notes: Inhalable fraction, Skin

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

CAS: 55965-84-9	OEL Type	MAK	AUSTRIA	Long Term: 0.05 mg/m3
	OEL Type	MAK	GERMANY	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 Notes: Inhalable fraction
	OEL Type	SUVA	SWITZERLAND	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 Notes: Inhalable fraction

2-methylisothiazol-3(2H)-one

CAS: 2682-20-4	OEL Type	MAK	AUSTRIA	Long Term: 0.05 mg/m3
	OEL Type	MAK	GERMANY	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 Notes: Inhalable fraction
	OEL Type	SUVA	SWITZERLAND	Long Term: 0.2 mg/m3; Short Term: 0.4 mg/m3 Notes: Inhalable fraction

Predicted No Effect Concentration (PNEC) values

2-(2-butoxyethoxy)ethanol

CAS: 112-34-5	Exposure Route: Fresh Water; PNEC Limit: 1.1 mg/l
	Exposure Route: Marine water; PNEC Limit: 0.11 mg/l
	Exposure Route: Freshwater sediments; PNEC Limit: 4.4 mg/kg
	Exposure Route: Marine water; PNEC Limit: 0.44 mg/kg
	Exposure Route: Soil; PNEC Limit: 0.32 mg/kg

Derived No Effect Level (DNEL) values

2-(2-butoxyethoxy)ethanol

CAS: 112-34-5	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker Professional: 67.5 mg/m3
	Exposure Route: Human Inhalation; Exposure Frequency: Short Term, local effects Worker Professional: 101.2 mg/m3
	Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects Consumer: 6.25 mg/kg

Propylidynetrimethanol

CAS: 77-99-6	Exposure Route: Human Inhalation; Exposure Frequency: Long Term, systemic effects Worker: 3.3 mg/m3; Consumer: 0.58 mg/m3
	Exposure Route: Human Dermal; Exposure Frequency: Long Term, systemic effects Worker: 0.94 mg/kg; Consumer: 0.34 mg/kg

Exposure Route: Human Oral; Exposure Frequency: Long Term, systemic effects
Consumer: 0.34 mg/kg

Notes on crystalline silica, quartz (respirable fraction): Since 2010, in accordance with the European CLP Regulation, as no harmonised classification is available for silica, industrial mineral manufacturers have jointly assessed the GHS classification for quartz (respirable fraction) and cristobalite (respirable fraction) to be STOT RE category 1 as regards silicosis risk. As a consequence of this classification, substances and mixtures containing crystalline silica (respirable fraction), in the form of identified impurities, additives or individual ingredients, are classed as: -STOT RE 1, if the concentration of quartz (respirable fraction) or cristobalite (respirable fraction) is greater than or equal to 10%; -STOT RE 2, if the concentration of quartz (respirable fraction) or cristobalite (respirable fraction) is between 1 and 10%; -If the quartz (respirable fraction) or cristobalite (respirable fraction) content in mixtures and substances is below 1%, no classification is required by law.

The assessments regarding the classification of products containing crystalline silica (respirable fraction) take into account the free availability of these respirable particles. If a product exists in a form that prevents the fraction of respirable particles from becoming airborne (for example, products in liquid form), this will be taken into consideration in the classification assessment. Therefore, industrial mineral manufacturers consider that, when a mineral classified as STOT RE1 or STOT RE2 due to its respirable fraction of crystalline silica is incorporated into a mixture in liquid form, such respirable fraction is no longer freely available and the classification would not be justified. [IMA Europe © 2014, http://www.crystallinesilica.eu/content]

8.2. Exposure controls

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction.

Eye protection:

Eye glasses with side protection (EN 16321).

Protection for skin:

Use suitable clothing that provides complete protection to the skin according to activity and exposure (EN 14605/EN 13982), e.g. overall, apron, safety shoes, suitable clothing.

Protection for hands:

There is no material or combination of materials for gloves that can guarantee unlimited resistance to any individual chemical or combination of chemicals.

For prolonged or repeated handling, use chemical resistant gloves.

Suitable materials for safety gloves (EN 374/EN 16523); NBR (Nitril rubber): thickness >= 0.4 mm; permeation time >= 480 min. Butyl caoutchouc (butyl rubber): thickness >= 0.4 mm; permeation time >= 480 min

The choice of suitable gloves does not only depend on the material, but also on other quality characteristics that vary from one manufacturer to another and on the manner and times according to which the mixture is used.

Respiratory protection:

If workers are exposed to concentrations above the exposure limit they must use appropriate, certified respirators.

Combination filtering device (EN 14387): mask with filter A-P2.

Environmental exposure controls:

See point 6.2

Hygienic and Technical measures

See section 7.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State: Liquid

Appearance: Liquid

Color: various

Odour: Characteristic

Melting point/freezing point: N.D.

Boiling point or initial boiling point and boiling range: N.D.

Flammability: N.A.

Lower and upper explosion limit: N.D.

Flash point: > 93°C

Auto-ignition temperature: N.D.

Decomposition temperature: N.A.

pH: >=7.50<=8.50 (Internal method)

Kinematic viscosity: > 20.5 mm²/s (40 °C)

Solubility in water: miscible in all ratio

Solubility in oil: No data available

Partition coefficient n-octanol/water (log value): N.A.

Vapour pressure: N.D.

Density and/or relative density: 1.25 - 1.40 kg/l (Internal method)

Relative vapour density: N.D. N.A.

Particle characteristics:

Particle size: N.A.

9.2. Other information

Explosive properties: N.A. (Internal assessment)
Oxidizing properties: N.A. (Internal assessment)

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

None.

10.4. Conditions to avoid

Keep away from heat sources.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

No hazardous decomposition products when stored and handled correctly.
See chapter 5.2

SECTION 11: Toxicological information

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

Information on hazard classes as defined in the retained Regulation (EC) No 1272/2008 (CLP) as amended by UK CLP Regulation, UK SI 2019/720 and UK SI 2020/1567.

Toxicological Information of the Preparation

a) acute toxicity	Not classified
	Based on available data, the classification criteria are not met
b) skin corrosion/irritation	Not classified
	Based on available data, the classification criteria are not met
c) serious eye damage/irritation	Not classified
	Based on available data, the classification criteria are not met
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	Not classified
	Based on available data, the classification criteria are not met
i) STOT-repeated exposure	Not classified
	Based on available data, the classification criteria are not met
j) aspiration hazard	Not classified
	Based on available data, the classification criteria are not met

Toxicological information on main components of the mixture:

titanium dioxide

CAS: 13463-67-7	a) acute toxicity	LD50 Oral Rat > 5000 mg/kg
		LC50 Inhalation Dust Rat > 6.82 mg/l 4h

2-(2-butoxyethoxy)ethanol

CAS: 112-34-5	a) acute toxicity	LD50 Oral Mouse 2410 mg/kg
		LC50 Inhalation Vapour Rat > 29 ppm 2h
		LD50 Skin Rabbit 2764 mg/kg

Polyethylene glycol monooleyl ether

CAS: 9004-98-2	a) acute toxicity	LD50 Oral Rat 2700 mg/kg

Propylidynetrimethanol

CAS: 77-99-6	a) acute toxicity	LD50 Oral Rat > 14000 mg/kg
		LC50 Inhalation Rabbit > 0.29 mg/l 4h

1,2-benzisothiazol-3(2H)-one

CAS: 2634-33-5 a) acute toxicity ATE - Oral: 450 mg/kg bw
ATE - Inhalation (Dust/mist): 0.21 mg/l

pyrithione zinc

CAS: 13463-41-7 a) acute toxicity ATE - Oral: 221 mg/kg bw
ATE - Inhalation (Dust/mist): 0.14 mg/l

Terbutryn

CAS: 886-50-0 a) acute toxicity ATE - Oral: 500 mg/kg bw

2-octyl-2H-isothiazol-3-one

CAS: 26530-20-1 a) acute toxicity ATE - Oral: 125 mg/kg bw
ATE - Dermal: 311 mg/kg bw
ATE - Inhalation (Dust/mist): 0.27 mg/l

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

CAS: 55965-84-9 a) acute toxicity ATE - Oral: 64 mg/kg bw
ATE - Dermal: 92.4 mg/kg bw
ATE - Inhalation (Dust/mist): 0.17 mg/l

2-methylisothiazol-3(2H)-one

CAS: 2682-20-4 a) acute toxicity ATE - Oral: 167 mg/kg bw
ATE - Dermal: 242 mg/kg bw
ATE - Inhalation (Dust/mist): 0.11 mg/l

11.2 Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration >= 0.1%

SECTION 12: Ecological information

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

12.1. Toxicity

Eco-Toxicological Information:

Harmful to aquatic life with long lasting effects.

List of Eco-Toxicological properties of the product

The product is classified: Aquatic Chronic 3(H412)

List of Eco-Toxicological properties of the components

titanium dioxide

CAS: 13463-67-7 a) Aquatic acute toxicity: LC50 Fish > 1000 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia > 1000 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae 61 mg/l 72h

2-(2-butoxyethoxy)ethanol

CAS: 112-34-5 a) Aquatic acute toxicity: LC50 Fish 1300 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia > 100 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae > 100 mg/l 96h

Propylidynetrimethanol

CAS: 77-99-6 a) Aquatic acute toxicity: LC50 Fish > 1000 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia 13000 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae > 1000 mg/l 72h

1,2-benzisothiazol-3(2H)-one

CAS: 2634-33-5 a) Aquatic acute toxicity: LC50 Fish 2.2 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia 3.27 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae 0.11 mg/l 72h
b) Aquatic chronic toxicity: NOEC Fish 0.21 mg/l - 28d
b) Aquatic chronic toxicity: NOEC Daphnia 1.2 mg/l - 21d
b) Aquatic chronic toxicity: NOEC Algae 0.04 mg/l 72h

pyrithione zinc

CAS: 13463-41-7 a) Aquatic acute toxicity: LC50 Fish 0.0104 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia 0.051 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae 0.0013 mg/l 72h
a) Aquatic acute toxicity: EC50 Freshwater algae 0.051 mg/l 72h
b) Aquatic chronic toxicity: NOEC Fish 0.00125 mg/l 28d
b) Aquatic chronic toxicity: NOEC Daphnia 0.0022 mg/l 21d
b) Aquatic chronic toxicity: NOEC Algae 0.00046 mg/l 96h
b) Aquatic chronic toxicity: NOEC Freshwater algae 0.0149 mg/l 72h

Terbutryn

CAS: 886-50-0 a) Aquatic acute toxicity: LC50 Fish 1.9 mg/l 96h
a) Aquatic acute toxicity: EC50 Algae 6.7 µg/l 72h
a) Aquatic acute toxicity: EC50 Daphnia 6.4 mg/l 48h
b) Aquatic chronic toxicity: NOEC Daphnia 0.05 mg/l 21d
b) Aquatic chronic toxicity: NOEC Fish 0.073 mg/l 28d
b) Aquatic chronic toxicity: NOEC Algae 0.0005 mg/l 72h

2-octyl-2H-isothiazol-3-one

CAS: 26530-20-1 a) Aquatic acute toxicity: LC50 Fish 0.036 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia 0.42 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae 0.084 mg/l 72h
b) Aquatic chronic toxicity: NOEC Fish 0.022 mg/l 28d
b) Aquatic chronic toxicity: NOEC Daphnia 0.002 mg/l 21d
b) Aquatic chronic toxicity: NOEC Algae 0.004 mg/l 72h

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

CAS: 55965-84-9 a) Aquatic acute toxicity: LC50 Fish 0.22 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia 0.1 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae 0.0052 mg/l 48h
a) Aquatic acute toxicity: EC50 Freshwater algae 0.048 mg/l 72h
b) Aquatic chronic toxicity: NOEC Fish 0.098 mg/l - 28d
b) Aquatic chronic toxicity: NOEC Daphnia 0.004 mg/l - 21d
b) Aquatic chronic toxicity: NOEC Freshwater algae 0.0012 mg/l 72h

2-methylisothiazol-3(2H)-one

CAS: 2682-20-4 a) Aquatic acute toxicity: LC50 Fish 6 mg/l 96h
a) Aquatic acute toxicity: EC50 Daphnia 1.68 mg/l 48h
a) Aquatic acute toxicity: EC50 Algae 0.157 mg/l 72h
b) Aquatic chronic toxicity: NOEC Fish 2.1 mg/l - 28d
b) Aquatic chronic toxicity: NOEC Daphnia 0.55 mg/l - 21d
b) Aquatic chronic toxicity: NOEC Algae 0.03 mg/l 72h

12.2. Persistence and degradability

2-(2-butoxyethoxy)ethanol

CAS: 112-34-5 Readily biodegradable

1,2-benzisothiazol-3(2H)-one

CAS: 2634-33-5 Non-readily biodegradable

pyrithione zinc

CAS: 13463-41-7 Readily biodegradable

2-octyl-2H-isothiazol-3-one

CAS: 26530-20-1 Non-readily biodegradable

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

CAS: 55965-84-9 Non-readily biodegradable

2-methylisothiazol-3(2H)-one

CAS: 2682-20-4 Non-readily biodegradable

12.3. Bioaccumulative potential

titanium dioxide

CAS: 13463-67-7 Not bioaccumulative

1,2-benzisothiazol-3(2H)-one

CAS: 2634-33-5 Not bioaccumulative

pyrithione zinc

CAS: 13463-41-7 Not bioaccumulative

Terbutryn

CAS: 886-50-0 Not bioaccumulative

2-octyl-2H-isothiazol-3-one

CAS: 26530-20-1 Not bioaccumulative

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

CAS: 55965-84-9 Not bioaccumulative

2-methylisothiazol-3(2H)-one

CAS: 2682-20-4 Not bioaccumulative

12.4. Mobility in soil

titanium dioxide

CAS: 13463-67-7 Not mobile

1,2-benzisothiazol-3(2H)-one

CAS: 2634-33-5 Test: Log Koc; Value: 1.150

pyrithione zinc

CAS: 13463-41-7 Test: Log Koc; Value: 2.900

Terbutryn

CAS: 886-50-0 Test: Log Koc; Value: 2.670

2-octyl-2H-isothiazol-3-one

CAS: 26530-20-1 Test: Log Koc; Value: 2.390

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

CAS: 55965-84-9 Test: Log Koc; Value: < 2.000

2-methylisothiazol-3(2H)-one

CAS: 2682-20-4 Test: Log Koc; Value: 0.890

12.5. Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

No endocrine disruptor substances present in concentration >= 0.1%

12.7 Other adverse effects

N.A.

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.

Do not allow it to enter drains or watercourses.

Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Once the product has expired, it must be disposed of in accordance with current legislation.

SECTION 14: Transport information

Not classified as dangerous in the meaning of transport regulations.

14.1. UN number or ID number

N/A

14.2. UN proper shipping name

ADR-Shipping Name: N/A

IATA-Shipping Name: N/A

IMDG-Shipping Name: N/A

14.3. Transport hazard class(es)

ADR-Class: N/A
IATA-Class: N/A
IMDG-Class: N/A

14.4. Packing group

ADR-Packing Group: N/A
IATA-Packing group: N/A
IMDG-Packing group: N/A

14.5. Environmental hazards

Marine pollutant: No
Environmental Pollutant: No
IMDG-EMS: N/A

14.6. Special precautions for user

Road and Rail (ADR-RID):

ADR exempt:
ADR-Label: N/A
ADR - Hazard identification number: N/A
ADR-Special Provisions: N/A
ADR-Transport category (Tunnel restriction code):

Air (IATA):

IATA-Passenger Aircraft: N/A
IATA-Cargo Aircraft: N/A
IATA-Label: N/A
IATA-Subsidiary hazards: N/A
IATA-Erg: N/A
IATA-Special Provisions: N/A

Sea (IMDG):

IMDG-Stowage and handling: N/A
IMDG-Segregation: N/A
IMDG-Subsidiary hazards: N/A
IMDG-Special Provisions: N/A

14.7. Maritime transport in bulk according to IMO instruments

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Directive 2010/75/EU
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2020/878
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)
Regulation (EU) n. 2020/217 (ATP 14 CLP)
Regulation (EU) n. 2020/1182 (ATP 15 CLP)
Regulation (EU) n. 2021/643 (ATP 16 CLP)
Regulation (EU) n. 2021/849 (ATP 17 CLP)
Regulation (EU) n. 2022/692 (ATP 18 CLP)
Regulation (EU) n. 2023/707
Regulation (EU) n. 2023/1434 (ATP 19 CLP)
Regulation (EU) n. 2023/1435 (ATP 20 CLP)

Regulation (EU) n. 2024/197 (ATP 21 CLP)
Regulation (EU) n. 2024/2564 (ATP 22 CLP)
Regulation (EU) n. 2024/2865
Regulation (EU) n. 2025/1222 (ATP 23 CLP)

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

Restrictions related to the product: 3

Restrictions related to the substances contained: 30, 40, 55, 57, 75

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

None

Regulation (EU) No 649/2012 (PIC regulation)

No substances listed

German Water Hazard Class.

Class 3: extremely hazardous.

SVHC Substances:

On the basis of available data, the product does not contain any SVHC in percentage ≥ 0.1%.

VOC content limit value (Directive 2004/42/EC) Cat. A/i: 140 g/l; COV < 140 g/l

Relevant EU provisions transposed through retained EU legislation:
UK REACH List of restrictions (Annex XVII);
UK REACH Candidate list of substances of very high concern (SVHC) for authorisation;
UK REACK List of substances subject to authorisation (Annex XIV);
Export and import of hazardous chemicals - Prior informed consent (PIC regulation).

15.2. Chemical safety assessment

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

SECTION 16: Other information

Code	Description
EUH071	Corrosive to the respiratory tract.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H351	Suspected of causing cancer if inhaled.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Code	Hazard class and hazard category	Description
3.1/2/Dermal	Acute Tox. 2	Acute toxicity (dermal), Category 2
3.1/2/Inhal	Acute Tox. 2	Acute toxicity (inhalation), Category 2
3.1/3/Dermal	Acute Tox. 3	Acute toxicity (dermal), Category 3
3.1/3/Oral	Acute Tox. 3	Acute toxicity (oral), Category 3
3.1/4/Oral	Acute Tox. 4	Acute toxicity (oral), Category 4
3.2/1	Skin Corr. 1	Skin corrosion, Category 1
3.2/1B	Skin Corr. 1B	Skin corrosion, Category 1B
3.2/1C	Skin Corr. 1C	Skin corrosion, Category 1C
3.2/2	Skin Irrit. 2	Skin irritation, Category 2

3.3/1	Eye Dam. 1	Serious eye damage, Category 1
3.3/2	Eye Irrit. 2	Eye irritation, Category 2
3.4.2/1	Skin Sens. 1	Skin Sensitisation, Category 1
3.4.2/1A	Skin Sens. 1A	Skin Sensitisation, Category 1A
3.6/2	Carc. 2	Carcinogenicity, Category 2
3.7/2	Repr. 2	Reproductive toxicity, Category 2
3.9/1	STOT RE 1	Specific target organ toxicity — repeated exposure, Category 1
4.1/A1	Aquatic Acute 1	Acute aquatic hazard, category 1
4.1/C1	Aquatic Chronic 1	Chronic (long term) aquatic hazard, category 1
4.1/C3	Aquatic Chronic 3	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 Sens. 1, H317	Calculation method
Aquatic Chronic 3, H412	Calculation method

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

Safety data sheets of raw materials suppliers.

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.

Legend to abbreviations and acronyms used in the safety data sheet:

ACGIH: American Conference of Governmental Industrial Hygienists

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ATE: Acute Toxicity Estimate

ATEmix: Acute toxicity Estimate (Mixtures)

BEI: Biological Exposure Index

CAS: Chemical Abstracts Service (division of the American Chemical Society).

CAV: Poison Center

CE: European Community

CLP: Classification, Labeling, Packaging.

CMR: Carcinogenic, Mutagenic and Reprotoxic

COV: Volatile Organic Compound

CSA: Chemical Safety Assessment

CSR: Chemical Safety Report

DNEL: Derived No Effect Level.

EC50: Half Maximal Effective Concentration

ECHA: European Chemicals Agency

EINECS: European Inventory of Existing Commercial Chemical Substances.

ES: Exposure Scenario

GefStoffVO: Ordinance on Hazardous Substances, Germany.

GHS: Globally Harmonized System of Classification and Labeling of Chemicals.

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association.

IC50: half maximal inhibitory concentration

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, for 50 percent of test population.

LD50: Lethal dose, for 50 percent of test population.

LDLo: Leathal Dose Low

N.A.: Not Applicable

N/A: Not Applicable

N/D: Not defined/ Not available

N.D.: Not available

NIOSH: National Institute for Occupational Safety and Health

NOAEL: No Observed Adverse Effect Level

OSHA: Occupational Safety and Health Administration

PBT: Persistent, Bioaccumulative and Toxic
PGK: Packaging Instruction
PNEC: Predicted No Effect Concentration.
PSG: Passengers
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.
TLV-TWA: Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
vPvB: Very Persistent, Very Bioaccumulative.
WGK: German Water Hazard Class.

Paragraphs modified from the previous revision:

- SECTION 1: Identification of the substance/mixture and of the company/undertaking
- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 8: Exposure controls/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information

2-(2-butoxyethoxy)ethanol

Substance identification
Chemical Name: 2-(2-butoxyethoxy)ethanol
CAS Number: 112-34-5
Date - Version: 11/03/2025

USE IN COATINGS Professional use.

Process categories:
PROC1, PROC2, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19
Environmental Release Categories:
ERC8a, ERC8d ERC9a, ERC9b

EXPOSURE CONTROL AND RISK MANAGEMENT MEASURES

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ESVOC SpERC 8.3b.v2

Operating conditions
Yearly amount used in EU: 1.000.000 kg
Minimum continuous emission days per year: 365
Emission factor to air: 98%
Emission factor in water: 1%
Emission factor in soil: 1%
Receiving surface water (flow rate): 18.000 m³/d
Freshwater dilution factor: 10
Marine water dilution factor: 100

Risk management measures
Type of treatment plant: Municipal sewage treatment plant
Assumed sewage treatment plant flow: 2,000 m³/d

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Environment
Risk Characterization Ratio (RCR) 0.045213
Maximum safe use amount: 12.1 kg/day
Risk from environmental exposure is driven by soil.

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC9a Extensive use of functional fluid (internal)

Operating conditions
Yearly amount used in EU: 1.000.000 kg
Minimum continuous emission days per year: 365
Emission factor to air: 5%
Emission factor in water: 0%
Emission factor in soil: 0%
Receiving surface water (flow rate): 18.000 m³/d
Freshwater dilution factor: 10
Marine water dilution factor: 100

Risk management measures
Type of treatment plant: Municipal sewage treatment plant
Assumed sewage treatment plant flow: 2,000 m³/d

Exposure estimation and reference to its source
Evaluation method: EASY TRA v4.1 ECETOC TRA v3.0 Environment
Risk Characterization Ratio (RCR) 0.057417
Maximum safe use amount: 9.5 kg/day
Risk from environmental exposure is driven by soil.

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: ERC9b Extensive use of functional fluid (external)

Operating conditions
Yearly amount used in EU: 1.000.000 kg
Minimum continuous emission days per year: 365
Emission factor to air: 5%
Emission factor in water: 5%
Emission factor in soil: 5%
Receiving surface water (flow rate): 18.000 m³/d
Freshwater dilution factor: 10
Marine water dilution factor: 100

Risk management measures
Type of treatment plant: Municipal sewage treatment plant
Assumed sewage treatment plant flow: 2,000 m³/d

Exposure estimation and reference to its source
Evaluation method: EASY TRA v4.1 ECETOC TRA v3.0 Environment
Risk Characterization Ratio (RCR) 0.057748
Maximum safe use amount: 9.5 kg/day
Risk from environmental exposure is driven by soil.

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC1

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.01 mg/cm²/day
Risk Characterization Ratio (RCR) 0.013514
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 0.0676 mg/m³
Risk Characterization Ratio (RCR) 0.001001

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC2

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.2 mg/cm²/day
Risk Characterization Ratio (RCR) 0.27027
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 33.7972 mg/m³
Risk Characterization Ratio (RCR) 0.5007

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC4

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Effectiveness: 30%.
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.2 mg/cm²/day
Risk Characterization Ratio (RCR) 0.27027
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 47.3161 mg/m³
Risk Characterization Ratio (RCR) 0.70098

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC5

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Effectiveness: 30%.
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.4 mg/cm²/day
Risk Characterization Ratio (RCR) 0.540541
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 47.3161 mg/m³
Risk Characterization Ratio (RCR) 0.70098

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8b

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Effectiveness: 30%.
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.2 mg/cm²/day
Risk Characterization Ratio (RCR) 0.27027
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 47.3161 mg/m³
Risk Characterization Ratio (RCR) 0.70098

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC8a (also covers PROC28)

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Provide a good standard of general ventilation (10 to 15 air changes per hour) Effectiveness: 70%.
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.2 mg/cm²/day
Risk Characterization Ratio (RCR) 0.27027
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 50.6958 mg/m³
Risk Characterization Ratio (RCR) 0.75105

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC10

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Provide a good standard of general ventilation (10 to 15 air changes per hour) Effectiveness: 70%.
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.4 mg/cm²/day
Risk Characterization Ratio (RCR) 0.540541
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 50.6958 mg/m³
Risk Characterization Ratio (RCR) 0.75105

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC11
Spraying of coatings, paints and inks

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Application dose: 3 l/min
Assumes activities are at ambient temperature

Risk management measures
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Effectiveness 90%.
Make sure the activity is not overhead.
Provide extract ventilation in points where emissions occur (LEV).
Ensure measures are in place for cleaning workplaces.
If there is no local ventilation system: Outdoor use
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.2 mg/cm²/day
Risk Characterization Ratio (RCR) 0.405405
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 13 mg/m³
Risk Characterization Ratio (RCR) 0.192593

Guidance for downstream users
http://www.ecetoc.org/tra
http://www.advancedreachtool.com

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC13

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour) Effectiveness: 30%.
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.4 mg/cm²/day
Risk Characterization Ratio (RCR) 0.540541
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 47.3161 mg/m³
Risk Characterization Ratio (RCR) 0.70098

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC15

Operating conditions
Substance concentration: >=0% - <=100%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 480 mins. 5 days/week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Use of suitable chemical resistant gloves. Effectiveness: 80%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.02 mg/cm²/day
Risk Characterization Ratio (RCR) 0.027027
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 33.7972 mg/m³
Risk Characterization Ratio (RCR) 0.5007

Guidance for downstream users
http://www.ecetoc.org/tra

EXPOSURE SCENARIO CONSIDERED

Covered use descriptors: PROC19

Operating conditions
Substance concentration: >=0% - <=25%
Physical state: Liquid
Vapor pressure of the substance during use: 2.91976 Pa
Duration and frequency of application: 240 mins. 5 days a week
Internal use
Assumes activities are at ambient temperature

Risk management measures
Wear adequate respiratory protection. Effectiveness: 90%.
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Effectiveness: 90%.
Use of adequate eye protection.

Exposure estimation and reference to its source
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - dermal, longterm - local 0.2 mg/cm²/day
Risk Characterization Ratio (RCR) 0.405405
Evaluation method: EASY TRA v5.2 ECETOC TRA v3.0 Worker
Estimation of exposure Worker - inhalation exposure, long-term - local 10.1392 mg/m³
Risk Characterization Ratio (RCR) 0.15021

Guidance for downstream users
http://www.ecetoc.org/tra