

SAFETY DATA SHEET, eSDS

Nanten Akryyli 216

Regulation (EU) No 1907/2006, 2020/878

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1	Product identifier				
	<table border="0"> <tr> <td style="padding-right: 20px;">Trade name</td> <td>Nanten Akryyli 216</td> </tr> <tr> <td></td> <td>Nanten Acrylic 216</td> </tr> </table>	Trade name	Nanten Akryyli 216		Nanten Acrylic 216
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	Nanten Acrylic 216				

1.2	Relevant identified uses of the substance or mixture and uses advised against		
	<table border="0"> <tr> <td style="padding-right: 20px;">The uses of the chemical</td> <td> Paints and coatings, primer. For professional use only. Product class (EuPCS): PC-CON-5. For details of the identified uses according to REACH-Regulation (EU) No. 1907/2006 refer to the annex 1 of this safety data sheet. </td> </tr> </table>	The uses of the chemical	Paints and coatings, primer. For professional use only. Product class (EuPCS): PC-CON-5. For details of the identified uses according to REACH-Regulation (EU) No. 1907/2006 refer to the annex 1 of this safety data sheet.
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1.3	Details of the supplier of the Safety Data Sheet												
	<table border="0"> <tr> <td></td> <td>Nanten Oy</td> </tr> <tr> <td>Street address</td> <td>Teollisuustie 6</td> </tr> <tr> <td>Postcode and post office</td> <td>04300 Tuusula, Finland</td> </tr> <tr> <td>Telephone number</td> <td>+358 9 274 7970</td> </tr> <tr> <td>E-mail address</td> <td>nanten@nanten.com</td> </tr> <tr> <td></td> <td>www.nanten.com</td> </tr> </table>		Nanten Oy	Street address	Teollisuustie 6	Postcode and post office	04300 Tuusula, Finland	Telephone number	+358 9 274 7970	E-mail address	nanten@nanten.com		www.nanten.com
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1.4	Emergency telephone number
	<p>Poison Information Centres Finland (Myrkytystietokeskus): 0800 147 111 or (+358) (0)9 471 977, open 24 h/d Estonia (Mürgistusteabekeskus): 16662 or (+372) 7943 794, www.16662.ee Emergency Response Centres (Europe): 112</p>

SECTION 2: HAZARDS IDENTIFICATION

2.1	Classification of the substance or mixture								
	<p>Classification according to Regulation (EC) No 1272/2008 (CLP)</p> <table border="1"> <tr> <td>Flammable liquids – category 2</td> <td>H225</td> </tr> <tr> <td>Skin corrosion/irritation – category 2</td> <td>H315</td> </tr> <tr> <td>Skin sensitization – category 1</td> <td>H317</td> </tr> <tr> <td>Specific target organ toxicity (single exposure) – category 3</td> <td>H335</td> </tr> </table>	Flammable liquids – category 2	H225	Skin corrosion/irritation – category 2	H315	Skin sensitization – category 1	H317	Specific target organ toxicity (single exposure) – category 3	H335
Flammable liquids – category 2	H225								
Skin corrosion/irritation – category 2	H315								
Skin sensitization – category 1	H317								
Specific target organ toxicity (single exposure) – category 3	H335								

2.2	Label elements
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Signal word: Danger

Hazard Statements:

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H335 - May cause respiratory irritation
 H225 - Highly flammable liquid and vapour

Precautionary Statements:

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 P243 - Take action to prevent static discharges
 P271 - Use only outdoors or in a well-ventilated area
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
 P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
 P273 - Avoid release to the environment

Contains:

Methyl methacrylate, 2-Ethylhexyl acrylate, Triethylenglycol dimethacrylate

2.3 Other hazards

The product contains no substituents classified as as Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bioaccumulative (vPvB) compounds or substances identified as having endocrine disrupting properties.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS**3.1 Substances**

This product is a mixture.

3.2 Mixtures

Substance name	CAS-, EC- or index number	REACH Registration No.	Weight-%	Classification 1272/2008/EU)
Methyl methacrylate	CAS: 80-62-6 EC: 201-297-1 Ind.: 607-035-00-6	01-2119452498-28	25 – 50	STOT SE 3, H335 Skin Irrit. 2, H315 Skin Sens. 1, H317 Flam Liq. 2, H225
2-Ethylhexyl acrylate	CAS: 103-11-7 EC: 203-080-7 Ind.: 607-107-00-7	01-2119453158-37	10 – 25	Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 3, H412
Triethylenglycol dimethacrylate	CAS: 109-16-0 EC: 203-652-6	01-2119969287-21	1 – 2,5	Skin Sens. 1, H317
2-Hydroxyethyl methacrylate	CAS: 868-77-9 EC: 212-782-2 Ind.: 607-124-00-X	01-2119490169-29	< 1	Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319
4-Methoxyphenol	CAS: 150-76-5 EC: 205-769-8 Ind.: 604-044-00-7	01-2119541813-40	< 0,1	Acute Tox. 4, H302 Skin Sens. 1, H317 Eye Irrit. 2, H319 Aquatic Chronic 3, H412

See Section 16 for full texts of the hazard statements (H phrases).

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures****General advice:**

Move out of dangerous area. Take off all contaminated clothing immediately.

Inhalation:

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If unconscious place in recovery position and get medical attention immediately. If not breathing, give artificial respiration.

Skin contact:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Continue rinsing for at least 10 minutes. Take off all contaminated clothing and wash before reuse. If skin irritation or rash occurs: Get medical attention.

Eye contact:

Remove contact lenses. Rinse cautiously with water. Continue rinsing for at least 10 minutes. Keep eyelids open. Get medical attention.

Ingestion:

Rinse or wipe mouth with water. Do NOT induce vomiting. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to the doctor: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing media: dry powder, foam, carbon dioxide (CO₂), water mist.
NOT recommended for safety reasons: strong water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products formed under fire conditions. Explosive reaction may occur on heating or burning. Burning produces irritant fumes. Flash back possible over considerable distance.

5.3 Advice for firefighters

Wear firefighter's suit conforming to standard EN469, including protective helmet, boots and gloves, and a self-contained breathing apparatus. Collect contaminated fire extinguishing water separately. Prevent entry to sewers, surface water and ground water.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****Personal precautions**

Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin, eyes and clothing.

Advice for emergency responders

Use personal protective equipment.

6.2 Environmental precautions

Stop leak if safe to do so. Do not allow to enter sewers, surface water or ground water.

6.3 Methods and materials for containment and cleaning up

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, vermiculite). Do not use saw dust. Place in container for disposal according to local /national regulations.

Methods for cleaning up: Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use only explosion-proof equipment.

6.4 Reference to other sections

See Section 8 for information on personal protection equipment.

See Section 13 for information on waste treatment.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling**

Avoid breathing dust, fume, gas, mist or vapours. Wear protective gloves and eye protection /face protection. Wash hands cautiously after handling. Keep working clothes separately.

Use only outdoors or in well-ventilated areas. Provide exhaust ventilation close to floor level. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Open drum carefully as content may be under pressure. Use only in well-ventilated areas. Vapours may form explosive mixtures with air. Have fire extinguishers ready before opening the drum.

Take measures to prevent the build-up of electrostatic charge. Do not use sparking tools. Use only explosion-proof equipment. Keep away from heat, sparks, open flames and hot surfaces. No smoking. In the event of fire: use dry powder, foam, carbon dioxide (CO₂) or water mist to extinguish the fire.

Advice on good working hygiene

Ensure that eyewash stations and safety showers are close to the workstation location. Keep the work area tidy and well organized. Do not eat, drink or smoke when using the product. Due to the sensitizing properties, avoid contact of contaminated working clothes with skin. Wash hands, skin and clothing after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Store in original container. Never fill containers more than 80 % because aerial oxygen is necessary for stabilising. When draining the product, attention must be taken to prevent exposure, build-up of electrostatic charge, and formation of explosive mixtures with air.

Store container tightly closed and in upright position. Do not store the product even temporarily in unlabelled vessels. Keep in an area equipped with solvent resistant flooring.

Store in a dry, well-ventilated place, at + 5...+ 25 °C. Store away from food and beverages.

Store the product and empty containers away from sources of heat, ignition and direct sunlight. Observe the possibility of polymerisation reactions (see section 10.3). Do not store together with oxidizing and self-igniting products. Avoid contact with incompatible materials: peroxides and reactive metals, amines, heavy metal compounds, oxidizing agents, reducing agents (section 10.5).

7.3 Specific end use(s)

Not defined. Observe instructions for use of the product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

This list is not exhaustive. Other national /international regulations may concern the monitoring of exposure to the ingredients of this product.

OEL and DNEL values given below apply to work-related exposure.

Occupational Exposure Limit Values (OELs)

Country	Substance	TWA (8 h)	STEL (15 min)
Finland (STM 2020)	Methyl methacrylate, CAS 80-62-6	42 mg/m ³ , 10 ppm	210 mg/m ³ , 50 ppm
Estonia	Metüülmetakrülaat, CAS 80-62-6	50 ppm	100 ppm
Latvia	Metilmetakrilāts, CAS 80-62-6	10 mg/m ³	-
	Akrilskābes 2-etilheksil- esteris, CAS 103-11-7	1 mg/m ³	-

TWA: Time-Weighted Average, STEL: Short-Term Exposure Limit

DNEL (Derived No Effect Level)

Methyl methacrylate, dermal: 13,7 mg/kg/d, inhalation: 210 mg/m³.

PNEC (Predicted No Effect Concentration)

Methyl methacrylate

Compartment	
Fresh water	0,94 mg/l
Marine water	0,94 mg/l
Soil	1,47 mg/kg dry weight
Fresh water sediment	5,74 mg/kg dry weight
Sewage treatment plant	10 mg/l

8.2 Exposure controls**Engineering controls**

Ensure adequate ventilation, especially in confined areas. Provide preferably local exhaust ventilation, OR use personal respiratory protection.

Eye and face protection

Wear tight chemical splash goggles. Wear face shield when appropriate. The goggles should have a CE-marking and comply with standard EN 166.

Hand protection

Wear chemical-resistant gloves complying with standard EN 374. Recommended materials: Multilayer gloves 4H /Silver Shield /Barrier, breakthrough time ≥ 240 min. Gloves intended for short-term use do not provide adequate protection against acrylates.

Check during use that the gloves retain their protective properties. Breakthrough times given by manufacturers are only informative. Breakthrough times cannot be accurately estimated for mixtures of chemical substances.

Skin protection

Wear protective clothing. Antistatic clothing, at least such as EN13034/EN 13034+A1 certified clothing that provides a limited protection towards small quantities and splashes of liquid chemicals.

Respiratory protection

Wear personal respiratory protection if ventilation is insufficient to prevent exposure. Wear respiratory protection with a gas filter or an air-fed respirator. Recommended filter type: A/P2. Compliance with standard EN 529.

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate surface water or ground water system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Physical state	Liquid
Colour	colourless
Odour	acrylic-like, pungent
Odour threshold	0,05 ppm, 0,21 mg/m ³ (methyl methacrylate)
Melting point /freezing point	methyl methacrylate: -48 °C
Initial boiling point and boiling range	methyl methacrylate: 101 °C
Flash point	methyl methacrylate: 12 °C
Evaporation rate	not available
Flammability (solid, gas)	not applicable
Lower flammability or explosive limit	2,1 vol-% (methyl methacrylate)
Upper flammability or explosive limit	12.5 vol-% (methyl methacrylate)
Autoignition temperature	not available
pH	not available (not soluble in water)
Viscosity	620 – 680 mPa·s (25 °C, kinematic)
Solubility(ies)	in water: 15,3 g/l (methyl methacrylate, 20 °C)
Partition coefficient: n-octanol/water	log P _{ow} 1,38 (methyl methacrylate)
Vapour pressure	38.7 hPa (methyl methacrylate)
Density	0,99 g/cm ³ (25 °C)
Vapour density	not available

9.2 Other information

No information available.

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

The product is stable when stored according to provisions.

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

Polymerisation occurs when exposed to white light, ultraviolet light or heat. Polymerisation is a highly exothermic reaction and may generate sufficient heat to cause thermal decomposition and/or rupture containers.

Polymerisation occurs when mixed with the catalyst (acrylic hardener) used in floor coating applications. The reaction is heat-releasing (exothermic). No hazardous reactions identified when handled and stored according to provisions.

10.4 Conditions to avoid

Heat, flames and sparks. Exposure to sunlight.

10.5 Incompatible materials

Avoid contact with:
 Radical-forming starting agents, peroxides and reactive metals
 Amines
 Heavy metal compound
 Oxidizing agents, reducing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Product Information:

Inhalation: Irritating to mucous membranes. May cause respiratory irritation.
 Eye contact: No data available.
 Skin contact: Causes skin irritation. May cause an allergic skin reaction.
 Ingestion: No data available.

< 1 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Substances:

	Test/meter	Dose/concentration	Species
Methyl methacrylate			
Oral	LC50	> 5 000 mg/kg	Rat
Inhalation	LC50	29,8 mg/l	Rat
Dermal	LD50	> 5 000 mg/kg	Rabbit
2-Ethylhexyl acrylate			
Oral	LC50	4 435 mg/kg	Rat
Inhalation	LC50	no information available	
Dermal	LD50	7 522 mg/kg	Rabbit

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

No information available.

Respiratory or skin sensitisation

May cause allergic skin reaction. May cause respiratory irritation.

Germ cell mutagenicity

No information available.

Carcinogenicity

No information available.

Reproductive toxicity

No information available.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity – repeated exposure

No information available.

Aspiration hazard

No information available.

11.2 Information on other hazards

No information available.

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

< 1 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Substances:

	Test	Meter	Result	Exposure time
Methyl methacrylate				
Fish, <i>Oncorhynchus mykiss</i>	Static	LC50	79 mg/l	96 h
Fish, <i>Oncorhynchus mykiss</i>	Flow-through	LC50	79 mg/l	96 h
Fish, <i>Poecilia reticulata</i>	Static	LC50	326 - 427 mg/l	96 h
Fish, <i>Pimephales promelas</i>	Static	LC50	126 - 191 mg/l	96 h
Fish, <i>Pimephales promelas</i>	Flow-through	LC50	243 - 275 mg/l	96 h
Fish, <i>Lepomis macrochirus</i>	Static	LC50	154 - 342 mg/l	96 h
Fish, <i>Lepomis macrochirus</i>	Flow-through	LC50	170 -206 mg/l	96 h
Invertebrates, <i>Daphnia magna</i>	Static	EC50	69 mg/l	48 h
2-Ethylhexyl acrylate				
Algae, <i>Pseudokirchneriella subcapitata</i>	-	EC50	44 mg/l	72 h
Algae, <i>Pseudokirchneriella subcapitata</i>	-	EC50	47 mg/l	96 h
Invertebrates, <i>Daphnia magna</i>	-	EC50	17,5 mg/l	48 h

12.2 Persistence and degradability

Partially biodegradable.

12.3 Bioaccumulative potential

Octanol-water partition coefficient, methyl methacrylate: log Pow 1,38. 2-Ethylhexyl acrylate: log Pow 4,64.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Methyl methacrylate: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB). No information available on the other substances.

12.6 Endocrine disrupting properties

No information available.

12.7 Other adverse effects

No information available.

SECTION 13: DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Dispose of contents and container according to Waste Framework Directive (EC) N:o 98/2008, national waste and environmental regulations and local regulations. Eliminate or reduce waste generation when possible. Dispose of via licenced waste management contractor.

Liquid residues must be disposed of as hazardous waste. Classify and label waste containers appropriately. Use, for example, European Waste Catalogue (EWC) n:o 080111*, waste paint and varnish containing organic solvents or other hazardous substances.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not burn, or use a cutting torch on, the empty drum. EWC n:o 150110* - packaging containing residues of or contaminated by dangerous substances.

SECTION 14: TRANSPORT INFORMATION**14.1 UN number**

ADR / RID: 1866
IMDG: 1866
ICAO-TI: 1866

14.2 UN proper shipping name

ADR / RID: UN 1866 – Resin solution
IMDG: UN 1866 – Resin solution
ICAO-TI: UN 1866 – Resin solution

14.3 Transport hazard class(es)

ADR / RID: 3
IMDG: 3
ICAO-TI: 3

14.4 Packing group

ADR / RID: II, tunnel restriction code D/E, hazard identification code 33, limited quantity 5 L.
IMDG: II, EmS F-E, S-E
ICAO-TI: II

14.5 Environmental hazards

IMDG marine pollutant: No.

14.6 Special precautions for user

Transport in sealed containers, in upright position and tightly fastened. Make sure that persons transporting the chemical have been trained for emergency and spillage situations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This product does not contain substances subject to authorisation according to REACH [(EU) N:o 1907/2006], Annex XIV.

This product does not contain restricted substances according to to REACH [(EU) N:o 1907/2006], Annex XVII.

Content of Volatile Organic Compounds (VOC) complies with directive 2004/42/CE. Maximum content of VOCs < 500 g/l, category A/j.

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for the following substances: Methyl methacrylate.

SECTION 16: OTHER INFORMATION**Changes to previous version (version 2.0, in Finnish)**

No changes to classification.

Safety instructions have been updated (Sections 4-8).

Exposure scenario (Annex 1) has been added.

Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H412 - Harmful to aquatic life with long lasting effects

H225 - Highly flammable liquid and vapour

Training advice for workers

It is recommended that persons handling this product should have at least a basic level training on occupational risk prevention, to facilitate comprehension and interpretation of this safety data sheet.

NOTE

The information provided in this safety data sheet is correct to the best of knowledge of Nanten, or it is based on sources that are considered to be reliable. However, it is the responsibility of the user to be aware of and to take into account all other information with relevance to the safe use of this product and to take the required measures to ensure safety and compliance with current regulations in handling, storing, using and disposing of this product.

Annex 1: EXPOSURE SCENARIO

The operational conditions and the implementation of Risk Management Measures (RMM) are dependent on the following priority-/lead substances for the respective exposure routes:

Indicator substance, environment: Methyl methacrylate

Indicator substance, health: Methyl methacrylate

1. Short title of the exposure scenario: **Professional end use in formulations**

Contributing environmental scenarios

Scenario	Environmental release category	Indoor /outdoor use
2.1	ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix	Indoor use
	ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix	Outdoor use

Contributing worker scenarios

Scenario	Process category	Indoor /outdoor use
2.2	PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	Indoor use
2.3	PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	Indoor use
2.4	PROC10: Roller application or brushing	Indoor use
2.5	PROC10: Roller application or brushing	Outdoor use
2.6	PROC19: Hand-mixing with intimate contact and only personal protective equipment available	Indoor use
2.7	PROC19: Hand-mixing with intimate contact and only personal protective equipment available	Outdoor use

2.1 Contributing exposure scenario controlling environmental exposure

Physical state of the mixture	liquid
Amount used	0,216 tons per site per year
Maximum allowable site tonnage (Msafe)	2500 kg/d (for wide disperse uses)
Flow rate of receiving surface water	18.000 m ³ /d
Local freshwater dilution factor	10
Local marine water dilution factor	100
Emission type	continuous
Emission days	300 d
Emission factors	
- air	5 %
- soil	0,5 %
- water	1 %

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Prevent product from entering drains, surface water or ground water.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to

soil

Air: Prevent environmental discharge consistent with regulatory requirements.

Soil: Contain and dispose of waste according to local regulations.

Water: Clear up spills immediately and dispose of waste safely.

Conditions and measures related to sewage treatment plant

Type of sewage treatment plant: Municipal Sewage Treatment Plant

Discharge rate: 2000 m³/d.

Conditions and measures related to external treatment of waste for disposal

Suitable waste treatment: External treatment and disposal of waste should comply with applicable local and/or national regulations.

Suitable recovery operations: External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2 Contributing exposure scenario controlling worker exposure: **PROC5** - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Concentration of the substance in a mixture ≤ 100 %

Physical form of the product Liquid, vapour pressure 0,5 – 10 kPa (at STP, 101 kPa, 0 °C)

Frequency and duration of use ≤ 8 h/d

Area of use Indoor use

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Procedures for release control and monitoring, workplace measurements.

Technical conditions and measures to control dispersion from source towards the worker

Route of exposure: Inhalation.

Protective measures: Use local exhaust ventilation (LEV) or engineering equipment implying comparable efficiency.

Effectiveness: 80 %.

Organisational measures to prevent/limit releases, dispersion and exposure

Route of exposure: Dermal.

Protective measures: Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Route of exposure: Dermal.

Protective measures: For personal protection see section 8 of SDS. Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness: 90 %.

2.3 Contributing exposure scenario controlling worker exposure: **PROC8a** - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of the substance in a mixture ≤ 100 %

Physical form of the product Liquid, vapour pressure 0,5 – 10 kPa (at STP, 101 kPa, 0 °C)

Frequency and duration of use ≤ 8 h/d

Area of use Indoor use

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Procedures for release control and monitoring, workplace measurements.

Technical conditions and measures to control dispersion from source towards the worker

Route of exposure: Inhalation.

Protective measures: Use local exhaust ventilation (LEV) or engineering equipment implying comparable efficiency.

Effectiveness: 80 %.

Organisational measures to prevent/limit releases, dispersion and exposure

Route of exposure: Dermal.

Protective measures: Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Route of exposure: Dermal.

Protective measures: For personal protection see section 8 of SDS. Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness: 90 %.

2.4 Contributing exposure scenario controlling worker exposure: **PROC10** - Roller application or brushing, **Indoor use**

Concentration of the substance in a mixture ≤ 100 %

Physical form of the product Liquid, vapour pressure 0,5 – 10 kPa (at STP, 101 kPa, 0 °C)

Frequency and duration of use ≤ 8 h/d

Area of use Indoor use

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Procedures for release control and monitoring, workplace measurements.

Technical conditions and measures to control dispersion from source towards the worker

Route of exposure: Inhalation.

Protective measures: Provide a good standard of controlled ventilation (5 to 10 air changes per hour).

Effectiveness: 70 %.

Organisational measures to prevent/limit releases, dispersion and exposure

Route of exposure: Dermal.

Protective measures: Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Route of exposure: Dermal.

Protective measures: For personal protection see section 8 of SDS. Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness: 90 %.

2.5 Contributing exposure scenario controlling worker exposure: **PROC10** - Roller application or brushing, **Outdoor use**

Concentration of the substance in a mixture ≤ 100 %

Physical form of the product Liquid, vapour pressure 0,5 – 10 kPa (at STP, 101 kPa, 0 °C)

Frequency and duration of use Avoid carrying out activities involving exposure for more than 4 hours per day.

Area of use Outdoor use

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Procedures for release control and monitoring, workplace measurements.

Organisational measures to prevent/limit releases, dispersion and exposure

Route of exposure: Dermal.

Protective measures: Assumes a good basic standard of occupational hygiene is implemented.

Route of exposure: Inhalation.

Protective measures: Ensure operation is undertaken outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation

Route of exposure: Dermal.

Protective measures: For personal protection see section 8 of SDS. Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness: 90 %.

2.6 Contributing exposure scenario controlling worker exposure: **PROC19**: Hand-mixing with intimate contact and only personal protective equipment available, **Indoor use**

Concentration of the substance in a mixture ≤ 100 %

Physical form of the product Liquid, vapour pressure 0,5 – 10 kPa (at STP, 101 kPa, 0 °C)

Frequency and duration of use Avoid carrying out activities involving exposure for more than 1 hour per day.

Area of use Indoor use

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Procedures for release control and monitoring, workplace measurements.

Organisational measures to prevent/limit releases, dispersion and exposure

Route of exposure: Dermal.

Protective measures: Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Route of exposure: Dermal.

Protective measures: For personal protection see section 8 of SDS. Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness: 90 %.

2.7 Contributing exposure scenario controlling worker exposure: **PROC19**: Hand-mixing with intimate contact and only personal protective equipment available, **Outdoor use**

Concentration of the substance in a mixture ≤ 100 %

Physical form of the product Liquid, vapour pressure 0,5 – 10 kPa (at STP, 101 kPa, 0 °C)

Frequency and duration of use Avoid carrying out activities involving exposure for more than 1 hour per day.

Area of use Outdoor use

Risk Management Measures (RMM)

Technical conditions and measures at process level (source) to prevent release

Procedures for release control and monitoring, workplace measurements.

Organisational measures to prevent/limit releases, dispersion and exposure

Route of exposure: Dermal.

Protective measures: Assumes a good basic standard of occupational hygiene is implemented.

Route of exposure: Inhalation.

Protective measures: Ensure operation is undertaken outdoors.

Conditions and measures related to personal protection, hygiene and health evaluation

Route of exposure: Dermal.

Protective measures: For personal protection see section 8 of SDS. Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Effectiveness: 90 %.

3. Exposure estimation and reference to its source

Environment

Professional end use in formulations

release categories: ERC8c, ERC8f

method: EUSES v.2.1

Compartment	Predicted Environmental Concentration (PEC)	Risk Characterisation Ratio (RCR)
Air	0,21 µg/m ³	0,000003
Fresh water	0,263 µg/l	0,00029
Fresh water sediment	0,638 µg/kg (wet weight)	0,00029
Soil	0,0369 µg/kg (wet weight)	0,000028

Based on the applied RMMs the risk towards environment is sufficiently controlled (RCR ≤ 1)
(RCR = exposure level /PNEC)

Health (workers)

Professional end use in formulations

Contributing scenario	Route of exposure	Specific condition	Exposure level	Risk Characterisation Ratio (RCR)
1.1 PROC5	inhalative, short-term, local and systemic	Short-term exposure, with local exhaust ventilation	8 ppm	0,08 (method: ECETOC TRA)
	dermal, long-term, systemic	Long-term exposure, using gloves	1,37 mg/kg bw/day	0,10 (method: ECETOC TRA)
	inhalative, long-term, systemic	With local exhaust ventilation	20 ppm	0,40
	combined, long-term, systemic			0,50
1.2 PROC8a	inhalative, short-term, local and systemic	Short-term exposure, with local exhaust ventilation	8 ppm	0,08 (method: ECETOC TRA)
	dermal, long-term, systemic	Long-term exposure, using gloves	1,37 mg/kg bw/day	0,10 (method: ECETOC TRA)
	inhalative, long-term, systemic	With local exhaust ventilation	20 ppm	0,40
	combined, long-term, systemic			0,50

1.3 PROC10	inhalative, short-term, local and systemic	Short-term exposure, indoor, Technical ventilation of workplace	12 ppm	0,12 (method: ECETOC TRA)
	dermal, long-term, systemic	Long-term exposure, indoor, using gloves	2,74 mg/kg bw/day	0,20 (method: ECETOC TRA)
	inhalative, long-term, systemic	Technical ventilation of workplace	30 ppm	0,60
	combined, long-term, systemic			0,80
1.4 PROC10	inhalative, short-term, local and systemic	Short-term exposure, outdoor	28 ppm	0,28 (method: ECETOC TRA)
	dermal, long-term, systemic	Long-term exposure, outdoor, using gloves	1,65 mg/kg bw/day	0,12 (method: ECETOC TRA)
	inhalative, long-term, systemic		42 ppm	0,84
	combined, long-term, systemic			0,96
1.5 PROC19	inhalative, short-term, local and systemic	Short-term exposure, indoor	40 ppm	0,40 (method: ECETOC TRA)
	dermal, long-term, systemic	Long-term exposure, indoor, using gloves	2,83 mg/kg bw/day	0,21 (method: ECETOC TRA)
	inhalative, long-term, systemic		20 ppm	0,40
	combined, long-term, systemic			0,61
1.6 PROC19	inhalative, short-term, local and systemic	Short-term exposure, outdoor	28 ppm	0,28 (method: ECETOC TRA)
	dermal, long-term, systemic	Long-term exposure, outdoor, using gloves	2,83 mg/kg bw/day	0,21 (method: ECETOC TRA)
	inhalative, long-term, systemic		14 ppm	0,28
	combined, long-term, systemic			0,49

mg/kg bw/day: milligram per kilogram of body weight per day

Based on the applied RMMs the risk towards health is sufficiently controlled ($RCR \leq 1$)
($RCR = \text{exposure level} / \text{DNEL}$)

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

The risk management measures given in this exposure scenario apply to the specified substance in a concentration as indicated in the scenario. The concentration of the substance in the product may differ. A downstream user should evaluate if the risk management measures may be adapted accordingly.

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Measured data could be used to confirm exposure levels are within the boundaries of the exposure scenario.