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

### 1.1. Product identifier

**Trade name or designation of the mixture** SYLVARES™ TR A25L

**Registration number** 01-2119979553-24-0000

**Synonyms** None.

**SDS number** 13651

**Product code** 200000001605

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

**Identified uses** Manufacture of substance. Formulation of preparations. Distribution of substance. Coating. Adhesive. Tyre build up.

**Uses advised against** None known.

### 1.3. Details of the supplier of the safety data sheet

**Company name** Kraton Chemical B.V.

**Address** Transistorstraat 16, 1322 CE Almere, The Netherlands

**Phone** +31 36 546 2800

**Email address** regulatory.eu@kraton.com

**1.4. Emergency telephone number** EU NCEC +44 1865 407 333

**General in EU** 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Austria National Poisons Information Centre** +431 406 4343 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Belgium National Poisons Control Centre** 070 245 245 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Bulgaria National Toxicological Information Centre** +359 2 9154 233 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Croatia Poisons Information Centre** +385 1 2348 342 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

**Cyprus Poison Centre** 1401 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Czech Republic National Poisons Information Centre** +420 224 919 293, or +420 224 915 402 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

**Denmark National Poisons Control Centre** +45 82 12 12 12 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Estonia National Poisons Information Centre** 16662 or abroad: (+372) 626 9390 (Monday 9:00AM to Saturday 9:00AM (closed on Sundays and on national holidays). SDS/Product information may not be available for the Emergency Service.)

**Finland National Poison Information Centre** (09) 471 977 (direct) or (09) 4711 (exchange) (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**France National Poisons Control Centre** ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Greece Poison Information Centre telephone number** (0030) 2107793777 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

**Hungary National Emergency Phone Number** +36-80-201-199 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

<b>Iceland Poison Centre</b>	(+354) 543 2222 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Latvia Emergency medical aid</b>	113
<b>Latvia Poison and Drug Information Centre</b>	+371 67042473 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Lithuania Neatidėliotina informacija apsinuodijus</b>	+370 5 236 20 52 or +37068753378 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
<b>Malta Accident and Emergency Department</b>	2545 4030 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
<b>Netherlands National Poisons Information Centre (NVIC)</b>	NVIC: +31 (0)88 755 8000 (Only for the purpose of informing medical personnel in cases of acute intoxications)
<b>Norway Norwegian Poison Information Centre</b>	22 59 13 00 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Portugal Poison Centre</b>	800 250 250 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Romania Biroul RSI si Informare Toxicologica</b>	021.318.36.06 (Available 8:00AM-3:00PM. SDS/Product information may not be available for the Emergency Service.)
<b>Slovakia National Toxicological Information Centre</b>	+421 2 5477 4166 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Spain Toxicology Information Service</b>	+ 34 91 562 04 20 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Sweden National Poison Information Centre</b>	112 - and ask for Poison Information (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
<b>Switzerland Tox Info Suisse</b>	145 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

##### Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 4	H413 - May cause long lasting harmful effects to aquatic life.
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### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.

**Hazard pictograms** None.

**Signal word** None.

##### Hazard statements

H413 May cause long lasting harmful effects to aquatic life.

#### Precautionary statements

##### Prevention

P273 Avoid release to the environment.

**Response** Not available.

**Storage** Not available.

##### Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental label information** None.

### 2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII. The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.	90-100	70750-57-1 500-245-8	01-2119979553-24-0000	-	

**Classification:** Aquatic Chronic 4;H413

#### List of abbreviations and symbols that may be used above

- #: This substance has been assigned Union workplace exposure limit(s).
- M: M-factor
- PBT: persistent, bioaccumulative and toxic substance.
- vPvB: very persistent and very bioaccumulative substance.

**Composition comments** The full text for all H-statements is displayed in section 16.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

- Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.
- Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.
- Eye contact** Rinse with water. Get medical attention if irritation develops and persists.
- Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed** Exposure may cause temporary irritation, redness, or discomfort.

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

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

- Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).
- Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed. Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

### 5.3. Advice for firefighters

- Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
- Special fire fighting procedures** Wear suitable protective equipment. Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

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

- For non-emergency personnel** Wear appropriate personal protective equipment.
- For emergency responders** Keep unnecessary personnel away.

**6.2. Environmental precautions** Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

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

Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

### 6.4. Reference to other sections

Not available.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. Follow all SDS/label precautions even after container is emptied because they may retain product residues.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Keep containers closed when not in use. Store at ambient temperature and atmospheric pressure.

### 7.3. Specific end use(s)

Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended**

Components	Type	Value
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. (CAS 70750-57-1)	STEL	300 mg/m <sup>3</sup>
	TWA	50 ppm
		150 mg/m <sup>3</sup>
		25 ppm

#### Biological limit values

No biological exposure limits noted for the ingredient(s).

#### Recommended monitoring procedures

Follow standard monitoring procedures.

#### Derived no effect levels (DNELs)

##### General population

Components	Value	Assessment factor	Notes
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. (CAS 70750-57-1)			
Long-term, Systemic, Dermal	3,6 mg/kg bw/day	40	Repeated dose toxicity
Long-term, Systemic, Inhalation	5 mg/m <sup>3</sup>	10	Repeated dose toxicity
Long-term, Systemic, Oral	3,6 mg/kg bw/day	40	Repeated dose toxicity

##### Workers

Components	Value	Assessment factor	Notes
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. (CAS 70750-57-1)			
Long-term, Systemic, Dermal	6 mg/kg bw/day	24	Repeated dose toxicity
Long-term, Systemic, Inhalation	23,3 mg/m <sup>3</sup>	6	Repeated dose toxicity

#### Predicted no effect concentrations (PNECs)

Components	Value	Assessment factor	Notes
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. (CAS 70750-57-1)			
Freshwater	0,1 mg/l	1000	
Marine water	0,01 mg/l	10000	
Sediment (freshwater)	2320,36 mg/kg		
Sediment (marine water)	232,036 mg/kg		
Soil	462,58 mg/kg		
STP	100 mg/l	10	

### 8.2. Exposure controls

#### Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## Individual protection measures, such as personal protective equipment

<b>General information</b>	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
<b>- Hand protection</b>	Wear appropriate chemical resistant gloves. When handling hot material, use heat resistant gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. Wear suitable gloves tested to EN374. Recommended gloves include rubber, neoprene, nitrile or viton. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness should be typically greater than 0.35 mm. This recommendation is advisory only. It may not be appropriate for all workplaces. It should not be construed as offering an approval for any specific use scenario. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes.
<b>- Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Eye wash fountain and emergency showers are recommended.
<b>Environmental exposure controls</b>	Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

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

<b>Physical state</b>	Liquid.
<b>Form</b>	Viscous. Paste.
<b>Colour</b>	Yellow
<b>Odour</b>	Odourless.
<b>Melting point/freezing point</b>	Not available.
<b>Boiling point or initial boiling point and boiling range</b>	Not available.
<b>Flammability</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower ( %)</b>	Not available.
<b>Explosive limit - lower ( %) temperature</b>	Not available.
<b>Explosive limit – upper (%)</b>	Not available.
<b>Explosive limit - upper ( %) temperature</b>	Not available.
<b>Flash point</b>	175,0 °C (347,0 °F) Cleveland closed cup EC Method A9
<b>Auto-ignition temperature</b>	> 255 - < 265 °C (> 491 - < 509 °F) EC Method A15
<b>Decomposition temperature</b>	Not available.
<b>pH</b>	Not available.
<b>Kinematic viscosity</b>	Not available.
<b>Solubility</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not available.
<b>Vapour pressure</b>	<0,001 mm Hg at 20°C
<b>Density and/or relative density</b>	
<b>Density</b>	980,00 kg/m3 at 20°C

Vapour density	Not available.
Particle characteristics	Not available.
<b>9.2. Other information</b>	
<b>9.2.1. Information with regard to physical hazard classes</b>	No relevant additional information available.
<b>9.2.2. Other safety characteristics</b>	
Chemical family	Polyterpene Resin
Evaporation rate	0 (n-BuAc=1) estimated
Explosive limit	Not available.
Percent volatile	<0,5 %
Softening point	> 22 - < 28 °C (> 71,6 - < 82,4 °F) Ring & Ball
Weighted solids	100 %

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Strong oxidising agents. Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	Upon decomposition this product emits acrid dense smoke with carbon dioxide, carbon monoxide, water and other products of combustion.

## SECTION 11: Toxicological information

**General information** Not available.

### Information on likely routes of exposure

<b>Inhalation</b>	Prolonged inhalation may be harmful.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.	Irritation Corrosion - Eye, No eye irritation. Result: Negative Species: New Zealand white rabbit Organ: Eye Test Duration: 7 days Observation Period: 7 days

**Ingestion** Expected to be a low ingestion hazard.

**Symptoms** Direct contact with eyes may cause temporary irritation.

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

**Acute toxicity** Based on available data, the classification criteria are not met.

Components	Species	Test Results
Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. (CAS 70750-57-1)		
<b>Acute</b>		
<b>Dermal</b>		
LD50	New Zealand white rabbit	> 2000 mg/kg, 14 days At this dose no death occurred.
	Rabbit	>= 5000 mg/kg
<b>Oral</b>		
LD50	Rat	5000 mg/kg
	Sprague-Dawley rat	> 5000 mg/kg, 15 days At this dose no death occurred.

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.

**Corrosivity**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.

In vitro Skin Corrosion: Human Skin Model Test, Non-irritating to the skin.; OECD 431  
Result: Negative  
Organ: Skin  
Test Duration: 60 min  
Observation Period: 60 min  
Notes: OECD 431, EC Method B,40**Serious eye damage/eye irritation**

Direct contact with eyes may cause temporary irritation.

**Eye contact**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.

Irritation Corrosion - Eye, No eye irritation.  
Result: Negative  
Species: New Zealand white rabbit  
Organ: Eye  
Test Duration: 7 days  
Observation Period: 7 days**Respiratory sensitisation**

Not a respiratory sensitiser.

**Skin sensitisation**

Prolonged skin contact may cause temporary irritation.

**Skin Sensitisation**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.

Local Lymph Node Assay, Not a skin sensitizer.; OECD 429  
Result: Negative  
Species: Mouse  
Notes: OECD 429, EC Method B42**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are carcinogenic.

**Mutagenicity**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.

Germ Cell Mutagenicity: Ames  
Result: Negative  
Species: Salmonella typhimurium  
Notes: OECD 471**Carcinogenicity**

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)**

Not listed.

**Reproductive toxicity**

This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**

Not classified.

**Specific target organ toxicity - repeated exposure**

Not classified.

**Aspiration hazard**

Not an aspiration hazard.

**Mixture versus substance information**

No information available.

**11.2. Information on other hazards****Endocrine disrupting properties**

The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**Other information**

Not available.

**SECTION 12: Ecological information****12.1. Toxicity**

May cause long lasting harmful effects to aquatic life.

**Components****Species****Test Results**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. (CAS 70750-57-1)

EC50 Activated sewage sludge &gt; 1000 mg/l, 3 Hours OECD 209

EL50 Algae (Pseudokirchneriella subcapitata) &gt; 100 mg/l, 72 Hours OECD 201

NOEL Algae (Pseudokirchneriella subcapitata) 100 mg/l, 72 Hours OECD 201

**Aquatic***Acute*

Crustacea

EL50 Daphnia magna &gt; 100 mg/l, 48 Hours OECD 202

NOEL Daphnia magna 100 mg/l, 48 Hours OECD 202

Fish

LL50 Oncorhynchus mykiss &gt; 100 mg/l, 96 Hours OECD 203

Components	Species	Test Results
	NOEL	Oncorhynchus mykiss
		100 mg/l, 96 Hours OECD 203

\* Estimates for product may be based on additional component data not shown.

**12.2. Persistence and degradability** Not readily degradable.

**Biodegradability**

**Percent Degradation (Aerobic Biodegradation)**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd.

8 % OECD 301F

Result: Not readily biodegradable.

Species: Activated sludge of a predominantly domestic sewage

Test Duration: 28 days

**12.3. Bioaccumulative potential**

**Partition coefficient**

**n-octanol/water (log Kow)**

Terpenes and Terpenoids, turpentine-oil, a-pinene fraction, polymd. > 4,04

**12.4. Mobility in soil** No data available.

**12.5. Results of PBT and vPvB assessment** This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.

**12.6. Endocrine disrupting properties** The product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

**12.7. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Residual waste** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**EU waste code** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Special precautions** Dispose in accordance with all applicable regulations.

**SECTION 14: Transport information**

**ADR**

**14.1. UN number** Not regulated as dangerous goods.

**14.2. UN proper shipping name** Not regulated as dangerous goods.

**14.3. Transport hazard class(es)**

**Class** Not assigned.

**Subsidiary risk** -

**Hazard No. (ADR)** Not assigned.

**Tunnel restriction code** Not assigned.

**14.4. Packing group** Not assigned.

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Not assigned.

**RID**

**14.1. UN number** Not regulated as dangerous goods.

**14.2. UN proper shipping name** Not regulated as dangerous goods.

**14.3. Transport hazard class(es)**

**Class** Not assigned.

**Subsidiary risk** -

**14.4. Packing group** Not assigned.

**14.5. Environmental hazards** No.



**14.6. Special precautions for user** Not assigned.

#### ADN

**14.1. UN number** Not regulated as dangerous goods.

**14.2. UN proper shipping name** Not regulated as dangerous goods.

**14.3. Transport hazard class(es)**

**Class** Not assigned.

**Subsidiary risk** -

**14.4. Packing group** Not assigned.

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Not assigned.

#### IATA

**14.1. UN number** Not regulated as dangerous goods.

**14.2. UN proper shipping name** Not regulated as dangerous goods.

**14.3. Transport hazard class(es)**

**Class** Not assigned.

**Subsidiary risk** -

**14.4. Packing group** Not assigned.

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Not assigned.

#### IMDG

**14.1. UN number** Not regulated as dangerous goods.

**14.2. UN proper shipping name** Not regulated as dangerous goods.

**14.3. Transport hazard class(es)**

**Class** Not assigned.

**Subsidiary risk** -

**14.4. Packing group** Not assigned.

**14.5. Environmental hazards**

**Marine pollutant** No.

**EmS** Not assigned.

**14.6. Special precautions for user** Not assigned.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

**Restrictions on use**

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

**Other EU regulations**

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

**Other regulations**

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**National regulations**

Follow national regulation for work with chemical agents.

**15.2. Chemical safety assessment**

A Chemical Safety Assessment has been carried out for this substance.

**Water hazard class**

**AwSV**

WGK1

**SECTION 16: Other information**

**List of abbreviations**

Not available.

**References**

Not available.

**Information on evaluation method leading to the classification of mixture**

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

**Full text of any statements, which are not written out in full under sections 2 to 15**

H413 May cause long lasting harmful effects to aquatic life.

**Revision information**

Product and Company Identification: Product and Company Identification

**Training information**

Follow training instructions when handling this material.

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## Annex to the extended Safety Data Sheet (eSDS)

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# 1 - Exposure Scenario Worker

## 1. Manufacture of substance

### List of use descriptors

**Sector(s) of Use** SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites. SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals

**Name of contributing environmental scenario and corresponding ERC** Manufacture of substance  
ERC1: Manufacture of substances

**List of names of contributing worker scenarios and corresponding PROCs** Manufacture of substance  
PROC1: Use in closed process, no likelihood of exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC15: Use as laboratory reagent

### 2.1.1. Contributing scenario controlling environmental exposure for Manufacture of substance

#### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical state** liquid

#### Amounts used

**Annual amount used in the EU** 500 tons/year  
**Regional use tonnage (tons/year):** 500 tons/year  
**Fraction of Regional tonnage used locally:** 1  
**Emission days (days/year):** 300 days per year

#### Environment factors not influenced by risk management

**Local freshwater dilution factor:** 10  
**Local marine water dilution factor:** 100

#### Other given operational conditions affecting environmental exposure

Type	Emission days (days/year)	Emission factors			Remarks
		Air	Soil	Water	
	300	0,000001	0,0001	0,00001	

#### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

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

**Air** Not available.  
**Soil** Not available.  
**Water** Not available.  
**Sediment** Not available.

**Organisational measures to prevent/limit release from site** Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater.

#### Conditions and measures related to municipal sewage treatment plant

##### Size of municipal sewage system/treatment plant (m3/d)

**Type** Municipal STP. Onsite STP.  
**Discharge rate** 2000 m<sup>3</sup>/day  
**Sludge treatment technique** Do not use sludge as fertiliser

#### Conditions and measures related to external treatment of waste for disposal

##### Fraction of used amount transferred to external waste treatment

**Suitable waste treatment** Dispose of waste product or used containers according to local regulations.

**Treatment effectiveness** Not available.

**Conditions and measures related to external recovery of waste**

**Fraction of used amount transferred to external waste treatment**

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

**2.2.1. Contributing scenario controlling worker exposure for Manufacture of substance**

**Product characteristics**

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical form of the product** liquid

**vapour pressure** 0,00055 Pa

**Amounts used**

Not available.

**Frequency and duration of use**

Not available.

**Human factors not influenced by risk management**

**Other given operational conditions affecting workers exposure**

Not available.

**Other relevant operational conditions**

Not available.

**Risk management measures (RMM)**

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

**Technical conditions and measures to control dispersion from source towards the worker** Not available.

**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.

**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**3. Exposure Estimation**

**Environment**

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	1,14E-06 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	7,95E-05 mg/l	0,000795	Used EUSES model.	
marine water	8,26E-06 mg/l	0,000826	Used EUSES model.	
freshwater sediment	4,01E-01 mg/kg wet weight	0,00398	Used EUSES model.	
marine sediment	4,17E-02 mg/kg wet weight	0,00413	Used EUSES model.	
soil	3,24E-01 mg/kg wet weight	0,00794	Used EUSES model.	
STP	8,98E-04 mg/l	0,00000898	Used EUSES model.	

**Health**

Not available.

#### **4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.

## 2 - Exposure Scenario Worker

### 1. Formulation of preparations

#### List of use descriptors

<b>Sector(s) of Use</b>	Not available.
<b>Name of contributing environmental scenario and corresponding ERC</b>	Formulation of preparations ERC2: Formulation of preparations
<b>List of names of contributing worker scenarios and corresponding PROCs</b>	Formulation of preparations PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation. PROC15: Use as laboratory reagent

#### 2.1.1. Contributing scenario controlling environmental exposure for Formulation of preparations

##### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical state** liquid

##### Amounts used

<b>Annual amount used in the EU</b>	500 tons/year
<b>Regional use tonnage (tons/year):</b>	500 tons/year
<b>Fraction of Regional tonnage used locally:</b>	1
<b>Emission days (days/year):</b>	300 days per year

##### Environment factors not influenced by risk management

<b>Local freshwater dilution factor:</b>	10
<b>Local marine water dilution factor:</b>	100

##### Other given operational conditions affecting environmental exposure

Type	Emission days		Emission factors			Remarks
	(days/year)	Air	Soil	Water		
	300	0,0025	0,0001	0,000005		

##### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

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

<b>Air</b>	Not available.
<b>Soil</b>	Not available.
<b>Water</b>	Not available.
<b>Sediment</b>	Not available.

**Organisational measures to prevent/limit release from site** Do not apply industrial sludge to natural soils. Prevent discharge of undissolved substance to or recover from onsite wastewater.

##### Conditions and measures related to municipal sewage treatment plant

##### Size of municipal sewage system/treatment plant (m3/d)

<b>Type</b>	Municipal STP. Onsite STP.
<b>Discharge rate</b>	2000 m <sup>3</sup> /day
<b>Sludge treatment technique</b>	Do not use sludge as fertiliser

##### Conditions and measures related to external treatment of waste for disposal



**Fraction of used amount transferred to external waste treatment****Suitable waste treatment** Dispose of waste product or used containers according to local regulations.**Treatment effectiveness** Not available.**Conditions and measures related to external recovery of waste****Fraction of used amount transferred to external waste treatment****Suitable recover operations** External recovery and recycling of waste should comply with applicable local and/or national regulations.**2.2.1. Contributing scenario controlling worker exposure for Formulation of preparations****Product characteristics****Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).**Physical form of the product** liquid**vapour pressure** 0,00055 Pa**Amounts used**

Not available.

**Frequency and duration of use**

Not available.

**Human factors not influenced by risk management****Other given operational conditions affecting workers exposure**

Not available.

**Other relevant operational conditions**

Not available.

**Risk management measures (RMM)****Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.**Technical conditions and measures to control dispersion from source towards the worker** Not available.**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.**3. Exposure Estimation****Environment**

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	9,53E-04 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	4,62E-05 mg/l	0,000462	Used EUSES model.	
marine water	3,25E-05 mg/l	0,00325	Used EUSES model.	
freshwater sediment	2,33E-01 mg/kg wet weight	0,00231	Used EUSES model.	
marine sediment	1,64E-01 mg/kg wet weight	0,0163	Used EUSES model.	
soil	2,79E-01 mg/kg wet weight	0,0068	Used EUSES model.	
STP	4,49E-04 mg/l	0,00000449	Used EUSES model.	

**Health**

Not available.

#### **4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.

### 3 - Exposure Scenario Worker

#### 1. Distribution of substance

##### List of use descriptors

###### Sector(s) of Use

SU8: Manufacture of bulk, large scale chemicals (including petroleum products). SU9: Manufacture of fine chemicals. SU0: Other: SU3: Industrial uses

###### Name of contributing environmental scenario and corresponding ERC

Distribution of substance  
 ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
 ERC5: Industrial use resulting in inclusion into or onto a matrix  
 ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)  
 ERC6b: Industrial use of reactive processing aids  
 ERC6c: Industrial use of monomers for manufacture of thermoplastics  
 ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers  
 ERC7: Industrial use of substances in closed systems

###### List of names of contributing worker scenarios and corresponding PROCs

Distribution of substance  
 PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC15: Use as laboratory reagent

#### 2.1.1. Contributing scenario controlling environmental exposure for Distribution of substance

##### Product characteristics

###### Concentration of the substance in a mixture

Covers percentage substance in the product up to 100 % (unless stated differently).

###### Physical state

liquid

##### Amounts used

Annual amount used in the EU 500 tons/year  
 Regional use tonnage (tons/year): 500 tons/year  
 Fraction of Regional tonnage used locally: 0,002  
 Emission days (days/year): 300 days per year

##### Environment factors not influenced by risk management

Local freshwater dilution factor: 10  
 Local marine water dilution factor: 100

##### Other given operational conditions affecting environmental exposure

Type	Emission days (days/year)	Emission factors			Remarks
		Air	Soil	Water	
	300	0,00001	0,00001	0,0000001	

##### Risk management measures (RMM)

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

Common practices vary across sites thus conservative process release estimates used.

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

Air Not available.  
 Soil Not available.  
 Water Not available.  
 Sediment Not available.

**Organisational measures to prevent/limit release from site** Not available.

**Conditions and measures related to municipal sewage treatment plant**

**Size of municipal sewage system/treatment plant (m3/d)**

**Type** Municipal STP. Onsite STP.  
**Discharge rate** 2000 m<sup>3</sup>/day  
**Sludge treatment technique** Do not use sludge as fertiliser

**Conditions and measures related to external treatment of waste for disposal**

**Fraction of used amount transferred to external waste treatment**

**Suitable waste treatment** Dispose of waste product or used containers according to local regulations.  
**Treatment effectiveness** Not available.

**Conditions and measures related to external recovery of waste**

**Fraction of used amount transferred to external waste treatment**

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

**2.2.1. Contributing scenario controlling worker exposure for Distribution of substance**

**Product characteristics**

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).  
**Physical form of the product** liquid  
**vapour pressure** 0,00055 Pa

**Amounts used**

Not available.

**Frequency and duration of use**

Not available.

**Human factors not influenced by risk management**

**Other given operational conditions affecting workers exposure**

Not available.

**Other relevant operational conditions**

Not available.

**Risk management measures (RMM)**

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.  
**Technical conditions and measures to control dispersion from source towards the worker** Not available.  
**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.  
**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**3. Exposure Estimation**

**Environment**

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	7,63E-07 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	1,29E-05 mg/l	0,000129	Used EUSES model.	
marine water	1,60E-06 mg/l	0,00016	Used EUSES model.	
freshwater sediment	6,49E-02 mg/kg wet weight	0,000644	Used EUSES model.	

marine sediment	8,08E-03 mg/kg wet weight	0,000801	Used EUSES model.
soil	5,00E-02 mg/kg wet weight	0,00123	Used EUSES model.
STP	1,80E-08 mg/l	0,00000000018	Used EUSES model.

#### Health

Not available.

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.

## 4 - Exposure Scenario Worker

### 1. Coating.

#### List of use descriptors

**Sector(s) of Use** SU0: Other: SU3: Industrial uses

#### Name of contributing environmental scenario and corresponding ERC

Coating.  
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles .

#### List of names of contributing worker scenarios and corresponding PROCs

Coating.  
PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC7: Industrial spraying. PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10: Roller application or brushing of adhesive and other coating.. PROC13: Treatment of articles by dipping and pouring. PROC15: Use as laboratory reagent

#### 2.1.1. Contributing scenario controlling environmental exposure for Coating.

##### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical state** liquid

##### Amounts used

**Annual amount used in the EU** 300 tons/year  
**Regional use tonnage (tons/year):** 300 tons/year  
**Fraction of Regional tonnage used locally:** 1  
**Emission days (days/year):** 220 days per year

##### Environment factors not influenced by risk management

**Local freshwater dilution factor:** 10  
**Local marine water dilution factor:** 100

##### Other given operational conditions affecting environmental exposure

Type	Emission days (days/year)	Emission factors			Remarks
		Air	Soil	Water	
	220	0,022	0	0	

##### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

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

**Air** Not available.  
**Soil** Not available.  
**Water** Not available.  
**Sediment** Not available.

**Organisational measures to prevent/limit release from site** Not available.

##### Conditions and measures related to municipal sewage treatment plant

##### Size of municipal sewage system/treatment plant (m3/d)

**Type** Municipal STP. Onsite STP.  
**Discharge rate** 2000 m<sup>3</sup>/day  
**Sludge treatment technique** Do not use sludge as fertiliser

##### Conditions and measures related to external treatment of waste for disposal

**Fraction of used amount transferred to external waste treatment****Suitable waste treatment** Dispose of waste product or used containers according to local regulations.**Treatment effectiveness** Not available.**Conditions and measures related to external recovery of waste****Fraction of used amount transferred to external waste treatment****Suitable recover operations** External recovery and recycling of waste should comply with applicable local and/or national regulations.**2.2.1. Contributing scenario controlling worker exposure for Coating.****Product characteristics****Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).**Physical form of the product** liquid**vapour pressure** 0,00055 Pa**Amounts used**

Not available.

**Frequency and duration of use**

Not available.

**Human factors not influenced by risk management****Other given operational conditions affecting workers exposure**

Not available.

**Other relevant operational conditions**

Not available.

**Risk management measures (RMM)****Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.**Technical conditions and measures to control dispersion from source towards the worker** Not available.**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.**3. Exposure Estimation****Environment**

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	5,03E-03 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	1,29E-05 mg/l	0,000129	Used EUSES model.	
marine water	1,60E-06 mg/l	0,00016	Used EUSES model.	
freshwater sediment	6,49E-02 mg/kg wet weight	0,000643	Used EUSES model.	
marine sediment	8,08E-03 mg/kg wet weight	0,000801	Used EUSES model.	
soil	5,38E-01 mg/kg wet weight	0,013	Used EUSES model.	
STP	0 mg/l	0	Used EUSES model.	

**Health**

Not available.

#### **4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.



## 5 - Exposure Scenario Worker

### 1. Adhesives, sealants

#### List of use descriptors

<b>Sector(s) of Use</b>	SU0: Other: SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites.
<b>Name of contributing environmental scenario and corresponding ERC</b>	Adhesives, sealants ERC4: Industrial use of processing aids in processes and products, not becoming part of articles .
<b>List of names of contributing worker scenarios and corresponding PROCs</b>	Adhesives, sealants PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC7: Industrial spraying. PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10: Roller application or brushing of adhesive and other coating. PROC13: Treatment of articles by dipping and pouring. PROC15: Use as laboratory reagent

#### 2.1.1. Contributing scenario controlling environmental exposure for Adhesives, sealants

##### Product characteristics

<b>Concentration of the substance in a mixture</b>	Covers percentage substance in the product up to 100 % (unless stated differently).
<b>Physical state</b>	liquid

##### Amounts used

<b>Annual amount used in the EU</b>	300 tons/year
<b>Regional use tonnage (tons/year):</b>	300 tons/year
<b>Fraction of Regional tonnage used locally:</b>	1
<b>Emission days (days/year):</b>	220 days per year

##### Environment factors not influenced by risk management

<b>Local freshwater dilution factor:</b>	10
<b>Local marine water dilution factor:</b>	100

##### Other given operational conditions affecting environmental exposure

Type	Emission days (days/year)	Emission factors			Remarks
		Air	Soil	Water	
	220	0,017	0	0	

##### Risk management measures (RMM)

<b>Technical conditions and measures at process level (source) to prevent release</b>	Common practices vary across sites thus conservative process release estimates used.
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##### Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

<b>Air</b>	Not available.
<b>Soil</b>	Not available.
<b>Water</b>	Not available.
<b>Sediment</b>	Not available.

<b>Organisational measures to prevent/limit release from site</b>	Not available.
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##### Conditions and measures related to municipal sewage treatment plant

##### Size of municipal sewage system/treatment plant (m3/d)

<b>Type</b>	Municipal STP. Onsite STP.
<b>Discharge rate</b>	2000 m <sup>3</sup> /day
<b>Sludge treatment technique</b>	Do not use sludge as fertiliser

##### Conditions and measures related to external treatment of waste for disposal

**Fraction of used amount transferred to external waste treatment****Suitable waste treatment** Dispose of waste product or used containers according to local regulations.**Treatment effectiveness** Not available.**Conditions and measures related to external recovery of waste****Fraction of used amount transferred to external waste treatment****Suitable recover operations** External recovery and recycling of waste should comply with applicable local and/or national regulations.**2.2.1. Contributing scenario controlling worker exposure for Adhesives, sealants****Product characteristics****Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).**Physical form of the product** liquid**vapour pressure** 0,00055 Pa**Amounts used**

Not available.

**Frequency and duration of use**

Not available.

**Human factors not influenced by risk management****Other given operational conditions affecting workers exposure**

Not available.

**Other relevant operational conditions**

Not available.

**Risk management measures (RMM)****Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.**Technical conditions and measures to control dispersion from source towards the worker** Not available.**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.**3. Exposure Estimation****Environment**

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	3,89E-03 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	1,29E-05 mg/l	0,000129	Used EUSES model.	
marine water	1,60E-06 mg/l	0,00016	Used EUSES model.	
freshwater sediment	6,49E-02 mg/kg wet weight	0,000643	Used EUSES model.	
marine sediment	8,08E-03 mg/kg wet weight	0,000801	Used EUSES model.	
soil	4,27E-01 mg/kg wet weight	0,0103	Used EUSES model.	
STP	0 mg/l	0	Used EUSES model.	

**Health**

Not available.

#### **4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.

## 6 - Exposure Scenario Worker

### 1. Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

**List of use descriptors**

<b>Sector(s) of Use</b>	SU11: Manufacture of rubber products
<b>Name of contributing environmental scenario and corresponding ERC</b>	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing. ERC4: Industrial use of processing aids in processes and products, not becoming part of articles. ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

**List of names of contributing worker scenarios and corresponding PROCs**

Manufacture of rubber products  
 PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC6: Calendering operations. PROC7: Industrial spraying. PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). PROC13: Treatment of articles by dipping and pouring. PROC14: Production of preparations or articles by tableting, compression, extrusion, pelletisation. PROC15: Use as laboratory reagent

#### 2.1.1. Contributing scenario controlling environmental exposure for Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

**Product characteristics**

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical state** liquid

**Amounts used**

<b>Annual amount used in the EU</b>	100 tons/year
<b>Regional use tonnage (tons/year):</b>	100 tons/year
<b>Fraction of Regional tonnage used locally:</b>	1
<b>Emission days (days/year):</b>	300 days per year

**Environment factors not influenced by risk management**

<b>Local freshwater dilution factor:</b>	10
<b>Local marine water dilution factor:</b>	100

**Other given operational conditions affecting environmental exposure**

Type	Emission days		Emission factors			Remarks
	(days/year)	Air	Soil	Water		
	300	0,01	0,0001	0,00001		

**Risk management measures (RMM)**

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

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

<b>Air</b>	Not available.
<b>Soil</b>	Not available.
<b>Water</b>	Not available.
<b>Sediment</b>	Not available.

**Organisational measures to prevent/limit release from site** Not available.

**Conditions and measures related to municipal sewage treatment plant**

**Size of municipal sewage system/treatment plant (m3/d)**

Type	Municipal STP. Onsite STP.
Discharge rate	2000 m <sup>3</sup> /day
Sludge treatment technique	Do not use sludge as fertiliser

**Conditions and measures related to external treatment of waste for disposal****Fraction of used amount transferred to external waste treatment**

Suitable waste treatment	Dispose of waste product or used containers according to local regulations.
Treatment effectiveness	Not available.

**Conditions and measures related to external recovery of waste****Fraction of used amount transferred to external waste treatment**

Suitable recover operations	External recovery and recycling of waste should comply with applicable local and/or national regulations.
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**2.2.1. Contributing scenario controlling worker exposure for Manufacture of rubber products****Product characteristics**

Concentration of the substance in a mixture	Covers percentage substance in the product up to 100 % (unless stated differently).
Physical form of the product	liquid
vapour pressure	0,00055 Pa

**Amounts used**

Not available.

**Frequency and duration of use**

Not available.

**Human factors not influenced by risk management****Other given operational conditions affecting workers exposure**

Not available.

**Other relevant operational conditions**

Not available.

**Risk management measures (RMM)**

Technical conditions and measures at process level (source) to prevent release	Common practices vary across sites thus conservative process release estimates used.
Technical conditions and measures to control dispersion from source towards the worker	Not available.
Organizational measures to prevent/limit releases, dispersion and exposure	Not available.
Conditions and measures related to personal protection, hygiene and health evaluations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**3. Exposure Estimation****Environment**

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	7,62E-04 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	2,62E-05 mg/l	0,000262	Used EUSES model.	
marine water	1,40E-05 mg/l	0,0014	Used EUSES model.	
freshwater sediment	1,32E-01 mg/kg wet weight	0,00131	Used EUSES model.	
marine sediment	7,04E-02 mg/kg wet weight	0,00698	Used EUSES model.	

soil	1,79E-01 mg/kg wet weight	0,00435	Used EUSES model.
STP	1,80E-04 mg/l	0,0000018	Used EUSES model.

#### Health

Not available.

#### 4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.

## 7 - Exposure Scenario Worker

### 1. Coating.

#### List of use descriptors

**Sector(s) of Use** SU0: Other: SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**Product categories [PC]:** PC1: Adhesives, sealants

**Name of contributing environmental scenario and corresponding ERC**  
 Coating.  
 ERC8a: Wide dispersive indoor use of processing aids in open systems  
 .  
 ERC8d: Wide dispersive outdoor use of processing aids in open systems  
 .

**List of names of contributing worker scenarios and corresponding PROCs**  
 Coating.  
 PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10: Roller application or brushing of adhesive and other coating. PROC11: Non industrial spraying. PROC13: Treatment of articles by dipping and pouring. PROC15: Use as laboratory reagent. PROC19: Hand-mixing with intimate contact and only PPE available

#### 2.1.1. Contributing scenario controlling environmental exposure for Coating.

##### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical state** liquid

##### Amounts used

**Annual amount used in the EU** 50 tons/year  
**Regional use tonnage (tons/year):** 50 tons/year  
**Fraction of Regional tonnage used locally:** 0,02  
**Emission days (days/year):** 365 days per year

##### Environment factors not influenced by risk management

**Local freshwater dilution factor:** 10  
**Local marine water dilution factor:** 100

##### Other given operational conditions affecting environmental exposure

Type	Emission days (days/year)	Emission factors			Remarks
		Air	Soil	Water	
	365	0	0,005	0,01	

##### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

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

**Air** Not available.  
**Soil** Not available.  
**Water** Not available.  
**Sediment** Not available.

**Organisational measures to prevent/limit release from site** Not available.

##### Conditions and measures related to municipal sewage treatment plant

##### Size of municipal sewage system/treatment plant (m3/d)

**Type** Municipal STP. Onsite STP.  
**Discharge rate** 2000 m³/day

**Sludge treatment technique** Do not use sludge as fertiliser

#### Conditions and measures related to external treatment of waste for disposal

##### Fraction of used amount transferred to external waste treatment

**Suitable waste treatment** Dispose of waste product or used containers according to local regulations.

**Treatment effectiveness** Not available.

#### Conditions and measures related to external recovery of waste

##### Fraction of used amount transferred to external waste treatment

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

### 2.2.1. Contributing scenario controlling worker exposure for Coating.

#### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical form of the product** liquid

**vapour pressure** 0,00055 Pa

#### Amounts used

Not available.

#### Frequency and duration of use

Not available.

#### Human factors not influenced by risk management

#### Other given operational conditions affecting workers exposure

Not available.

#### Other relevant operational conditions

Not available.

#### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

**Technical conditions and measures to control dispersion from source towards the worker** Not available.

**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.

**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 3. Exposure Estimation

#### Environment

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	7,56E-07 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	2,38E-05 mg/l	0,000238	Used EUSES model.	
marine water	1,18E-05 mg/l	0,00118	Used EUSES model.	
freshwater sediment	1,20E-01 mg/kg wet weight	0,00119	Used EUSES model.	
marine sediment	5,93E-02 mg/kg wet weight	0,00588	Used EUSES model.	
soil	9,50E-02 mg/kg wet weight	0,00233	Used EUSES model.	
STP	1,48E-04 mg/l	0,00000148	Used EUSES model.	



## Health

Not available.

### **4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.

## 8 - Exposure Scenario Worker

### 1. Adhesives, sealants

#### List of use descriptors

**Sector(s) of Use** SU0: Other: SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

**Product categories [PC]:** PC1: Adhesives, sealants

**Name of contributing environmental scenario and corresponding ERC**  
 Adhesives, sealants  
 ERC8a: Wide dispersive indoor use of processing aids in open systems  
 .  
 ERC8d: Wide dispersive outdoor use of processing aids in open systems  
 .

**List of names of contributing worker scenarios and corresponding PROCs**  
 Adhesives, sealants  
 PROC1: Use in closed process, no likelihood of exposure. PROC2: Use in closed, continuous process with occasional controlled exposure. PROC3: Use in closed batch process (synthesis or formulation). PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises. PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact). PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities. PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities. PROC10: Roller application or brushing of adhesive and other coating. PROC11: Non industrial spraying. PROC13: Treatment of articles by dipping and pouring. PROC15: Use as laboratory reagent. PROC19: Hand-mixing with intimate contact and only PPE available

#### 2.1.1. Contributing scenario controlling environmental exposure for Adhesives, sealants

##### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical state** liquid

##### Amounts used

**Annual amount used in the EU** 50 tons/year  
**Regional use tonnage (tons/year):** 50 tons/year  
**Fraction of Regional tonnage used locally:** 0,002  
**Emission days (days/year):** 365 days per year

##### Environment factors not influenced by risk management

**Local freshwater dilution factor:** 10  
**Local marine water dilution factor:** 100

##### Other given operational conditions affecting environmental exposure

Type	Emission days (days/year)	Emission factors			Remarks
		Air	Soil	Water	
	365	0	0	0,015	

##### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

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

**Air** Not available.  
**Soil** Not available.  
**Water** Not available.  
**Sediment** Not available.

**Organisational measures to prevent/limit release from site** Not available.

##### Conditions and measures related to municipal sewage treatment plant

##### Size of municipal sewage system/treatment plant (m3/d)

**Type** Municipal STP. Onsite STP.  
**Discharge rate** 2000 m³/day

**Sludge treatment technique** Do not use sludge as fertiliser

#### Conditions and measures related to external treatment of waste for disposal

##### Fraction of used amount transferred to external waste treatment

**Suitable waste treatment** Dispose of waste product or used containers according to local regulations.

**Treatment effectiveness** Not available.

#### Conditions and measures related to external recovery of waste

##### Fraction of used amount transferred to external waste treatment

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

### 2.2.1. Contributing scenario controlling worker exposure for Adhesives, sealants

#### Product characteristics

**Concentration of the substance in a mixture** Covers percentage substance in the product up to 100 % (unless stated differently).

**Physical form of the product** liquid

**vapour pressure** 0,00055 Pa

#### Amounts used

Not available.

#### Frequency and duration of use

Not available.

#### Human factors not influenced by risk management

#### Other given operational conditions affecting workers exposure

Not available.

#### Other relevant operational conditions

Not available.

#### Risk management measures (RMM)

**Technical conditions and measures at process level (source) to prevent release** Common practices vary across sites thus conservative process release estimates used.

**Technical conditions and measures to control dispersion from source towards the worker** Not available.

**Organizational measures to prevent/limit releases, dispersion and exposure** Not available.

**Conditions and measures related to personal protection, hygiene and health evaluations** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 3. Exposure Estimation

#### Environment

Compartment	PEC	RCR (PEC/PNEC)	Method	Remarks
Air.	7,56E-07 mg/m <sup>3</sup>	The use is assessed to be safe.	Used EUSES model.	
freshwater	2,93E-05 mg/l	0,000293	Used EUSES model.	
marine water	1,68E-05 mg/l	0,00168	Used EUSES model.	
freshwater sediment	1,48E-01 mg/kg wet weight	0,00147	Used EUSES model.	
marine sediment	8,50E-02 mg/kg wet weight	0,00842	Used EUSES model.	
soil	1,18E-01 mg/kg wet weight	0,00288	Used EUSES model.	
STP	2,21E-04 mg/l	0,00000221	Used EUSES model.	

## Health

Not available.

### **4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

The immediate downstream user is required to evaluate whether the risk management measures and operational conditions described in the ES fits to his use. Where other RMM / OC are adopted, user should then ensure that risks are managed to at least equivalent levels. This may be based on a set of determinants (and a suitable algorithm) which together ensure control of risk. Where relevant DU can use other methods, such as scaling, he needs to check whether he acts within the boundaries set by the information provided in the exposure scenario.