SAFETY DATA SHEET
A07625

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

1.1. Product identifier

Product name A07625

Product number A07625, FP-000725, FP-000727

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

Identified uses Adhesive.

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier

APOLLO CHEMICALS LTD
SANDY WAY
AMINGTON INDUSTRIAL ESTATE
TAMWORTH
STAFFS
B77 4DS
T: +44 (0) 1827 54281
F: +44 (0) 1827 53030
E: compliance@apollo.co.uk

1.4. Emergency telephone number

Emergency telephone +44 01827 69662 (NOT 24HRS - 8am-5pm mon-fri)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Carc. 2 - H351 STOT SE 3 - H335, H336

Environmental hazards Not Classified

Human health The liquid may be irritating to skin. Contains non-volatile isocyanate. Heating may generate vapours which irritate the respiratory system. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Physicochemical Vapours are heavier than air and may travel along the floor and accumulate in the bottom of containers.

2.2. Label elements

Hazard pictograms

A07625

Signal word	Danger
Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H351 Suspected of causing cancer. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness.
Precautionary statements	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 IF exposed or concerned: Get medical advice/ attention. P501 Dispose of contents/ container in accordance with national regulations.
Supplemental label information	EUH204 Contains isocyanates. May produce an allergic reaction.
Contains	DICHLOROMETHANE, DIPHENYLMETHANE-4,4'-DI-ISOCYANATE, ETHYL ACETATE, TOSYL ISOCYANATE
Supplementary precautionary statements	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing vapour/ spray. P264 Wash contaminated skin thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P284 [In case of inadequate ventilation] wear respiratory protection. P302+P352 IF ON SKIN: Wash with plenty of water. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P321 Specific treatment (see medical advice on this label). P333+P313 If skin irritation or rash occurs: Get medical advice/ attention. P337+P313 If eye irritation persists: Get medical advice/ attention. P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor. P362+P364 Take off contaminated clothing and wash it before reuse. P405 Store locked up.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

DICHLOROMETHANE		**30-60%**
CAS number: 75-09-2	EC number: 200-838-9	REACH registration number: 01-2119480404-41-0007

Classification
Acute Tox. 4 - H302
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Carc. 2 - H351
STOT SE 3 - H336

A07625

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE		5-10%
CAS number: 101-68-8	EC number: 202-966-0	REACH registration number: 01-2119457014-47-0000

Classification
Acute Tox. 4 - H332
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
Skin Sens. 1 - H317
Carc. 2 - H351
STOT SE 3 - H335
STOT RE 2 - H373

ETHYL ACETATE		1-5%
CAS number: 141-78-6	EC number: 205-500-4	REACH registration number: 01-2119475103-46-0017

Classification
Flam. Liq. 2 - H225
Eye Irrit. 2 - H319
STOT SE 3 - H336

TOSYL ISOCYANATE		<1%
CAS number: 4083-64-1	EC number: 223-810-8	REACH registration number: 01-2119980050-47-0001

Classification
Acute Tox. 3 - H331
Skin Irrit. 2 - H315
Eye Irrit. 2 - H319
Resp. Sens. 1 - H334
STOT SE 3 - H335

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Remove affected person from source of contamination.

Inhalation Move affected person to fresh air at once. Get medical attention if any discomfort continues.

Ingestion DO NOT induce vomiting. Get medical attention immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

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

A07625

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Irritation of nose, throat and airway. Coughing, chest tightness, feeling of chest pressure.
Ingestion	May cause discomfort if swallowed.
Skin contact	Prolonged skin contact may cause redness and irritation.
Eye contact	Severe irritation, burning and tearing.

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

Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with foam, carbon dioxide, dry powder or water fog.
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

Specific hazards	The product is non-combustible. Irritating gases or vapours. Not known.
Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon. Oxides of nitrogen.

5.3. Advice for firefighters

Protective actions during firefighting	Containers close to fire should be removed or cooled with water. Do not allow water to contact any leaked material.
Special protective equipment for firefighters	Wear chemical protective suit. Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions	Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb spillage with non-combustible, absorbent material. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Provide adequate ventilation. Contain spillage with sand, earth or other suitable non-combustible material. Avoid the spillage or runoff entering drains, sewers or watercourses.

6.4. Reference to other sections

Reference to other sections	Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Avoid inhalation of vapours and spray/mists. Avoid contact with skin and eyes. Do not use in confined spaces without adequate ventilation and/or respirator. Spraying is permitted only in closed systems, spray cabinets or spray boxes with adequate ventilation.

A07625

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in closed original container at temperatures between 5°C and 25°C.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

DICHLOROMETHANE

Long-term exposure limit (8-hour TWA): WEL 100 ppm 350 mg/m³
Short-term exposure limit (15-minute): WEL 300 ppm 1060 mg/m³
Sk

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m3(Sen)
Short-term exposure limit (15-minute): WEL 0.07 mg/m3(Sen)

ETHYL ACETATE

Long-term exposure limit (8-hour TWA): WEL 200 ppm
Short-term exposure limit (15-minute): WEL 400 ppm

TOSYL ISOCYANATE

Long-term exposure limit (8-hour TWA): WEL 0.02 mg/m3(Sen)
Short-term exposure limit (15-minute): WEL 0.07 mg/m3(Sen)

WEL = Workplace Exposure Limit
Sk = Can be absorbed through the skin.

Ingredient comments WEL = Workplace Exposure Limits

DICHLOROMETHANE (CAS: 75-09-2)

Ingredient comments WEL = Workplace Exposure Limits

DNEL Consumer - Dermal; Short term systemic effects: 353 mg/m³
Workers - Dermal; Short term systemic effects: 706 mg/m³

PNEC
- Fresh water; 0.54 mg/l
- Sediment (Freshwater); 4.47 mg/kg
- Intermittent release; 0.27 mg/l
- Sediment (Marinewater); 1.61 mg/kg
- marine water; 0.194 mg/l
- STP; 26 mg/l
- Soil; 0.583 mg/kg

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE (CAS: 101-68-8)

A07625

DNEL

Workers - Inhalation; Short term systemic effects: 0.1 mg/m³
Workers - Dermal; Short term local effects: 28.7 mg/cm²
Workers - Inhalation; Short term local effects: 0.1 mg/m³
Workers - Inhalation; Long term systemic effects: 0.05 mg/m³
Workers - Inhalation; Long term local effects: 0.05 mg/m³
Consumer - Dermal; Short term systemic effects: 25 mg/kg bw/day
Workers - Dermal; Short term systemic effects: 50 mg/kg bw/day
Consumer - Oral; Short term systemic effects: 20 mg/kg bw/day
Consumer - Dermal; Short term local effects: 17.2 mg/cm²
Consumer - Inhalation; Short term local effects: 0.05 mg/m³
Consumer - Inhalation; Long term systemic effects: 0.025 mg/m³
Consumer - Inhalation; Long term local effects: 0.025 mg/m³
Consumer - Inhalation; Short term systemic effects: 0.05 mg/m³

PNEC

- marine water; 0.1 mg/l
- STP; 1 mg/l
- Fresh water; 1 mg/l
- Soil; 1 mg/kg

ETHYL ACETATE (CAS: 141-78-6)

DNEL

Workers - Inhalation; Short term systemic effects: 1468 mg/m³
Workers - Inhalation; Short term local effects: 1468 mg/m³
Consumer - Inhalation; Short term systemic effects: 734 mg/m³
Consumer - Inhalation; Short term local effects: 374 mg/m³
Workers - Inhalation; Long term local effects: 734 mg/m³
Workers - Dermal; Long term systemic effects: 63 mg/kg bw/day
Workers - Inhalation; Long term systemic effects: 734 mg/m³
Consumer - Dermal; Long term systemic effects: 37 mg/kg bw/day
Consumer - Inhalation; Long term systemic effects: 367 mg/m³
Consumer - Oral; Long term systemic effects: 4.5 mg/kg bw/day
Consumer - Inhalation; Long term local effects: 367 mg/m³

PNEC

- Fresh water; 0.26 mg/l
- marine water; 0.026 mg/l
- Intermittent release; 1.65 mg/l
- Sediment (Freshwater); 1.25 mg/kg
- Sediment (Marinewater); 0.125 mg/kg
- Soil; 0.24 mg/kg
- STP; 650 mg/l

8.2. Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients. Provide adequate general and local exhaust ventilation. Use explosion-proof general and local exhaust ventilation.

Eye/face protection

Wear chemical splash goggles.

Hand protection

It is recommended that gloves are made of the following material: Nitrile rubber. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended.

A07625

Other skin and body protection	Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.
Hygiene measures	Use engineering controls to reduce air contamination to permissible exposure level. Wash hands after handling. When using do not eat, drink or smoke.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Gas filter, type AX.
Environmental exposure controls	Keep container tightly sealed when not in use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Coloured liquid.
Colour	Various colours.
Odour	Characteristic.
Odour threshold	Not available.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	39-40C°C @
Flash point	Technically not feasible.
Evaporation rate	Not available.
Evaporation factor	Not available.
Flammability (solid, gas)	Not available.
Other flammability	Not available.
Vapour pressure	Not available.
Vapour density	Not available.
Relative density	@ 20c°C
Bulk density	Not available.
Solubility(ies)	Insoluble in water.
Partition coefficient	Not available.
Decomposition Temperature	Not available.
Viscosity	Kinematic viscosity > 20.5 mm²/s.
Explosive properties	Not available.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Not available.
Comments	Information given is applicable to the product as supplied.

9.2. Other information

Other information	No information required.

A07625

Refractive index	Not available.
Particle size	Not available.
Molecular weight	Not available.
Volatility	Not available.
Saturation concentration	Not available.
Critical temperature	Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The product will harden into a solid mass in contact with water and moisture.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not known. May polymerise. Avoid heat.

10.4. Conditions to avoid

Conditions to avoid Water, moisture.

10.5. Incompatible materials

Materials to avoid No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 5,000.0

Acute toxicity - inhalation

ATE inhalation (gases ppm) 457,142.86

ATE inhalation (vapours mg/l) 122.22

Toxicological information on ingredients.

DICHLOROMETHANE

Toxicological effects	The toxicity of this substance has been assessed during REACH registration.
Acute toxicity - oral	
Acute toxicity oral (LD_{50} mg/kg)	2,000.0
Species	Rat
ATE oral (mg/kg)	2,000.0

A07625

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	2,000.0
Species	Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	86.0
Species	Rat
ATE inhalation (vapours mg/l)	86.0

Skin corrosion/irritation

Skin corrosion/irritation	Irritating to skin. REACH dossier information.

Serious eye damage/irritation

Serious eye damage/irritation	Causes eye irritation.

Respiratory sensitisation

Respiratory sensitisation	Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro	Positive.
Genotoxicity - in vivo	Negative.

Carcinogenicity

IARC carcinogenicity	IARC Group 2B Possibly carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility	No evidence of reproductive toxicity in animal studies.
Reproductive toxicity - development	No evidence of reproductive toxicity in animal studies.

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	10,000.0
Species	Rat
ATE oral (mg/kg)	10,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	9,400.0
Species	Rabbit
ATE dermal (mg/kg)	9,400.0

Acute toxicity - inhalation

A07625

Acute toxicity inhalation (LC_{50} vapours mg/l)	0.31
Species	Rat
ATE inhalation (vapours mg/l)	11.0

Carcinogenicity

IARC carcinogenicity	IARC Group 3	Not classifiable as to its carcinogenicity to humans.

ETHYL ACETATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	4,100.0
Species	Mouse
ATE oral (mg/kg)	4,100.0

Acute toxicity - dermal

Acute toxicity dermal (LD_{50} mg/kg)	20,000.0
Species	Rabbit
ATE dermal (mg/kg)	20,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} vapours mg/l)	30.0
Species	Rat
ATE inhalation (vapours mg/l)	30.0

TOSYL ISOCYANATE

Acute toxicity - oral

Acute toxicity oral (LD_{50} mg/kg)	2,234.0
Species	Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC_{50} gases ppmV)	640.0
Species	Rat
ATE inhalation (gases ppm)	640.0

SECTION 12: Ecological information

Ecotoxicity The product is not expected to be toxic to aquatic organisms.

12.1. Toxicity

A07625

Ecological information on ingredients.

DICHLOROMETHANE

Acute aquatic toxicity

Acute toxicity - fish	LC50, 96 hours: 193 mg/l, Pimephales promelas (Fat-head Minnow) LC_{50}, 48 hours: 97 mg/l, Fundulus heteroclitus
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 27 mg/l, Daphnia magna LC_{50}, 48 hours: 109 mg/l, Palaemonetes pugio
Acute toxicity - aquatic plants	NOEC, 192 hours: 550 mg/l, Microcystis aeruginosa - Algae, blue, cyanobacteria
Acute toxicity - microorganisms	EC_{50}, 0.67 hours: 2590 mg/l, Bacteria

Chronic aquatic toxicity

Chronic toxicity - fish early life stage	NOEC, 28 days: 83 mg/l, Pimephales promelas (Fat-head Minnow)

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

Acute aquatic toxicity

Acute toxicity - fish	LC_{50}, 96 hours: >1000 mg/l, Marinewater fish
Acute toxicity - aquatic invertebrates	EC_{50}, 24 hours: >1000 mg/l, Daphnia magna

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >10 mg/l, Daphnia magna

ETHYL ACETATE

Acute aquatic toxicity

Acute toxicity - fish	EC_{50}, 48 hours: 610 mg/l, Marinewater fish LC_{50}, 96 hours: 230 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC_{50}, 48 hours: 11.5 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC_{50}, 48 hours: 5600 mg/l, Freshwater algae

12.2. Persistence and degradability

12.3. Bioaccumulative potential

Partition coefficient Not available.

Ecological information on ingredients.

DICHLOROMETHANE

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	Not available.

DIPHENYLMETHANE-4,4'-DI-ISOCYANATE

A07625

Partition coefficient log Pow: 4.51

ETHYL ACETATE

Bioaccumulative potential BCF: 30,

Partition coefficient Not available.

12.4. Mobility in soil

Ecological information on ingredients.

DICHLOROMETHANE

Mobility The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

ETHYL ACETATE

Mobility The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

DICHLOROMETHANE

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

ETHYL ACETATE

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not applicable.

Ecological information on ingredients.

DICHLOROMETHANE

Other adverse effects Not applicable.

ETHYL ACETATE

Other adverse effects Not known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

A07625

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	2810
UN No. (IMDG)	2810
UN No. (ICAO)	2810
UN No. (ADN)	2810

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	TOXIC LIQUID, ORGANIC, N.O.S.
Proper shipping name (IMDG)	TOXIC LIQUID, ORGANIC, N.O.S.
Proper shipping name (ICAO)	TOXIC LIQUID, ORGANIC, N.O.S.
Proper shipping name (ADN)	TOXIC LIQUID, ORGANIC, N.O.S.

14.3. Transport hazard class(es)

ADR/RID class	6.1
ADR/RID classification code	T1
ADR/RID label	6.1
IMDG class	6.1
ICAO class/division	6.1
ADN class	6.1

Transport labels

14.4. Packing group

ADR/RID packing group	III
IMDG packing group	III
ICAO packing group	III
ADN packing group	III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS	F-A, S-A
ADR transport category	2
Emergency Action Code	2X
Hazard Identification Number (ADR/RID)	60
Tunnel restriction code	(E)

A07625

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

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

National regulations

Health and Safety at Work etc. Act 1974 (as amended).
The Control of Substances Hazardous to Health Regulations 2002 (SI 2002 No. 2677) (as amended).
The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
Control of Substances Hazardous to Health Regulations 2002 (as amended).

EU legislation

Commission Directive 91/322/EEC of 29 May 1991 on establishing indicative limit values by implementing Council Directive 80/1107/EEC on the protection of workers from the risks related to exposure to chemical, physical and biological agents at work.
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Issued by Compliance

Revision date 03/09/2019

Revision 21

Supersedes date 01/06/2015

SDS number 20296

Hazard statements in full

H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.

Store Between Store Between 5'c - 25'c

Contains SVHC NO

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

METHYLENE CHLORIDE (stabilizer: Amylene)

Version 1 Revision Date 20.11.2012 Print Date 03.01.2014 GB / EN

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

1.1 Product identifier

Trade name	:	METHYLENE CHLORIDE (stabilizer: Amylene)
Substance name	:	dichloromethane (Stabilizer: Amylene)
REACH Registration Number	:	01-2119480404-41-0000

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

Use of the Substance/Mixture	:	Specific use(s):	Industrial and professional use Consumer use Refer to attached exposure scenario Annex.
Recommended restrictions on use	:	Paint strippers See Annex XVII to Regulation (EC) no 1907/2006 for Conditions of restriction	

1.3 Details of the supplier of the safety data sheet

Company	:	Akzo Nobel Industrial Chemicals bv Stationsstraat 77 NL 3811 MH Amersfoort The Netherlands
Telephone	:	+31334676767
Telefax	:	+31334676110
E-mail address	:	industrialchemicals.sds@akzonobel.com

1.4 Emergency telephone number

Emergency telephone number	:	AkzoNobel Chemicals-Deventer-NL: +31 570 679211

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, 2, H315

Eye irritation, 2, H319
Carcinogenicity, 2, H351
Specific target organ toxicity - single exposure, 3, Respiratory system, H335
, Central nervous system, H336
Specific target organ toxicity - repeated exposure, 2, H373

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification (67/548/EEC, 1999/45/EC)

Carcinogenic Category 3, Xn, R40

For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Symbol(s) :

Signal word : Warning

Hazard statements :	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H335	May cause respiratory irritation.
	H336	May cause drowsiness or dizziness.
	H351	Suspected of causing cancer.
	H373	May cause damage to organs through prolonged or repeated exposure.
Precautionary statements :	**Prevention:**	
	P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
	P264	Wash skin thoroughly after handling.
	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
	Response:	
	P308 + P313	IF exposed or concerned: Get medical advice/ attention.
	Storage:	
	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
	Disposal:	
	P501	Dispose of contents/ container to an approved waste disposal plant.

For the full list of P-statements please see section 16.

Hazardous components which must be listed on the label:

Dichloromethane 75-09-2

2.3 Other hazards

No further data available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : CH2Cl2

Hazardous substance

Chemical Name	PBT vPvB OEL	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Classification (67/548/EEC)	Concentration [%]
Dichloromethane		75-09-2 200-838-9 01-2119480404-41	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Carc. 2; H351 STOT SE 3; H335, H336 STOT RE 2; H373	Xi; R36/37/38 Carc.Cat.3; R40 R67	99.5

For the full text of the H-Statements mentioned in this Section, see Section 16.

For the full text of the R-phrases mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.

If inhaled : If breathed in, move person into fresh air.
Consult a physician after significant exposure.
Give oxygen or artificial respiration if needed.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with plenty of water.
If skin irritation persists, call a physician.

In case of eye contact : Remove contact lenses.
Rinse with plenty of water.
Protect unharmed eye.
Keep eye wide open while rinsing.
Obtain medical attention.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Induce vomiting, but only if victim is fully conscious.
Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Nausea
Vomiting
Fatigue

Dizziness
Headache
Shortness of breath

Risks : Later control for pneumonia and lung oedema.
May cause cardiac arrhythmia.
Respiratory disorders

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.
Do not give drugs from adrenaline-ephedrine group.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting / Specific hazards arising from the chemical : Do not allow run-off from fire fighting to enter drains or water courses.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Hydrogen chloride
Phosgene

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Prevent fire extinguishing water from contaminating surface water or the ground water system.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear respiratory protection.
Ensure adequate ventilation.

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up / Methods for containment : Soak up with inert absorbent material.
Unsuitable material for picking up:
Earth
Sand

Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Additional advice : For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.
Avoid formation of aerosol.
Do not breathe vapours or spray mist.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.
Vapours are heavier than air and may spread along floors.
Do not burn, or use a cutting torch on, the empty drum.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Prevent unauthorized access.
Keep in a well-ventilated place.

Other data : Suitable container and packaging materials for safe storage
Stainless steel
Carbon steel

7.3 Specific end use(s)

Specific use(s) : Refer to attached exposure scenario Annex.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Dichloromethane	75-09-2	TWA	100 ppm 350 mg/m3	2007-08-01	GB EH40	
	Further information	:	Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	300 ppm 1,060 mg/m3	2007-08-01	GB EH40	
	Further information	:	Sk: Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			

STEL: Short term exposure limit
TWA: Time Weighted Average (TWA)

Component: Dichloromethane

DNEL/DMEL : Workers
Inhalation
Acute systemic effects
706 mg/m3

Workers
Inhalation
Long-term systemic effects
353 mg/m3

Workers
Skin contact
Long-term systemic effects
4750 mg/kg bw/day

Consumers
Inhalation
Acute systemic effects
353 mg/m3

Consumers
Inhalation
Long-term systemic effects
88.3 mg/m3

Consumers
Skin contact
Long-term systemic effects
2395 mg/kg bw/day

Consumers
Ingestion
Long-term systemic effects
0.06 mg/kg bw/day

Component: Dichloromethane

PNEC : Fresh water
0.54 mg/l

Marine water
0.194 mg/l

Intermittent water
0.27 mg/l

Sewage treatment plant

26 mg/l

Fresh water sediment
4.47 mg/kg

Marine sediment
1.61 mg/kg

Soil
0.583 mg/kg

8.2 Exposure controls

Engineering Controls
Effective exhaust ventilation system
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
Hand protection	:	Fluorinated rubber Break through time: > 120 min Glove thickness: > 0.4 mm Fluorinated rubber Break through time: > 480 min Glove thickness: > 0.8 mm PVA Break through time: > 480 min Glove thickness: > 0.8 mm butyl-rubber Break through time: > 10 min Glove thickness: > 0.4 mm Protective gloves complying with EN 374.
Eye protection	:	Safety glasses with side-shields conforming to EN166 or Face-shield
Skin and body protection	:	Wear suitable protective clothing. Boots
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

Environmental exposure controls

General advice	:	Do not flush into surface water or sanitary sewer system.

If the product contaminates rivers and lakes or drains inform respective authorities.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Form	:	Clear liquid
Colour	:	colourless
Odour	:	sweet
Odour Threshold	:	no data available

Safety data

pH	:	not applicable
Melting point	:	ca. -97 °C at 1,013 hPa
Boiling point	:	40 °C at 1,013 hPa
Flash point	:	does not flash
Evaporation rate	:	no data available
Flammability (solid, gas)	:	The product is not flammable.
Lower explosion limit	:	13 %(V)
Upper explosion limit	:	22 %(V)
Vapour pressure	:	476 hPa at 20 °C 584 hPa at 25 °C 709 hPa at 30 °C
Relative vapor density	:	2.93 at 25 °C
Relative density	:	1.359 at 20 °C
Water solubility	:	ca. 20 g/l at 20 °C
Solubility in other solvents	:	miscible with most organic solvents
Partition coefficient: n-octanol/water	:	log Pow: 1.25 at 20 °C
Auto-ignition temperature	:	605 °C at 1,013 hPa

Decomposition temperature	:	> 120 °C
Viscosity, dynamic	:	0.42 mPa.s at 25 °C
Viscosity, kinematic	:	no data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Not classified as oxidising.

9.2 Other information

Peroxide content	:	not applicable

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid	:	Avoid elevated temperatures

10.5 Incompatible materials

Materials to avoid	:	Zinc Magnesium Finely divided aluminium Strong bases Alkali metals Strong oxidizing agents Alkaline earth metals

10.6 Hazardous decomposition products

Hazardous decomposition products	:	Hydrogen chloride Carbon monoxide Phosgene
Thermal decomposition	:	> 120 °C

SECTION 11: TOXICOLOGICAL INFORMATION

Product information:
Hazard Summary

Inhalation	:	Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.

Thermal decomposition can lead to release of irritating gases and vapours.
Inhalation may cause central nervous system effects.

Skin : Causes skin irritation.

Eyes : Causes serious eye irritation.

Ingestion : May be harmful if swallowed.

11.1 Information on toxicological effects

Toxicology data for the components:
Toxicology Assessment
Dichloromethane
CMR effects : Carcinogenicity: Limited evidence of carcinogenicity in animal studies

Test result
Dichloromethane
Acute oral toxicity : LD50: > 2,000 mg/kg
Species: rat
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50: 86 mg/l
Exposure time: 4 h
Species: rat

Acute dermal toxicity : LD50: > 2,000 mg/kg
Species: rat
Method: OECD Test Guideline 402

Skin irritation : Species: rabbit
Irritating to skin.
Method: OECD Test Guideline 404

Eye irritation : Species: rabbit
Irritating to eyes.

Sensitisation : Species: mouse
Not sensitizing.
Method: OECD Guide-line 429 - Skin Sensitzation: Local Lymph Node Assay

Repeated dose toxicity : Species: rat
Application Route: Oral
Exposure time: 104 weeks ()
NOEL: 6
Method: OECD Test Guideline 453

Species: rat
Application Route: Inhalation
Exposure time: 104 weeks ()
NOEL: 200

Method: OECD Test Guideline 453

Germ cell mutagenicity

Genotoxicity in vitro	:	In vitro cytogenetic test in CHO cells: positive Method: OECD guide-line 476 - In vitro Mammalian Cell Gene Mutation Test In vitro gene mutation study in mammalian cells negative Method: Other guidelines Ames test positive Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Genotoxicity in vivo	:	Chromosome aberration test in vivo Species: mouse Method: Mutagenicity (micronucleus test) negative
Reproductive toxicity/Fertility	:	Method: OECD Test Guideline 416 Species: rat Application Route: Inhalation
Reproductive toxicity/Development/Teratogenicity	:	Method: OECD Test Guideline 414 Species: mouse Application Route: Inhalation Method: OECD Test Guideline 414 Species: rat Application Route: Inhalation
Target Organ Systemic Toxicant - Single exposure	:	May cause respiratory irritation. May cause drowsiness or dizziness.
Target Organ Systemic Toxicant - Repeated exposure	:	Species: rat Application Route: Oral Exposure time: 104 weeks () NOEL: 6 Method: OECD Test Guideline 453 Species: rat Application Route: Inhalation Exposure time: 104 weeks () NOEL: 200 Method: OECD Test Guideline 453 Exposure routes: Inhalation Target Organs: Blood, Central nervous system May cause damage to organs through prolonged or repeated exposure. Exposure routes: Ingestion Target Organs: Blood, Liver

May cause damage to organs through prolonged or repeated exposure.

SECTION 12: ECOLOGICAL INFORMATION

Product information:
Ecotoxicology Assessment

Additional ecological information : None known.

12.1 Toxicity

Components:
Ecotoxicology Assessment
Dichloromethane

Results of PBT assessment : Not classified as PBT or vPvB

Test result
Dichloromethane

Toxicity to fish : LC50: 193 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)
flow-through test Method: Other guidelines

LC50: 97 mg/l
Exposure time: 48 h
Species: Fundulus heteroclitus
Marine water Method: Other guidelines

Toxicity to daphnia and other aquatic invertebrates : LC50: 27 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Fresh water Method: EPA-660/3-75-009

LC50: 109 mg/l
Exposure time: 48 h
Species: Palaemonetes pugio
Marine water Method: Other guidelines

Toxicity to algae : NOEC: 550 mg/l
Exposure time: 192 h
Species: Microcystis aeruginosa - Algae, blue, cyanobacteria
Cell multiplication inhibition test

Toxicity to bacteria : EC50: 2,590 mg/l
Exposure time: 0.67 h
Respiration inhibition
Method: OECD Guide-line 209

Toxicity to fish (Chronic toxicity) : NOEC: 83 mg/l
Exposure time: 28 d
Species: Pimephales promelas (fathead minnow)
flow-through test
Method: Other guidelines

12.2 Persistence and degradability

Components:
Dichloromethane

Biodegradability	:	aerobic Readily biodegradable. 66 % Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:
Dichloromethane

Bioaccumulation	:	No bioaccumulation is to be expected (log Pow <= 4).

12.4 Mobility in soil

Components:
Dichloromethane

Mobility	:	Medium: Soil no data available

12.5 Results of PBT and vPvB assessment

Components:
Dichloromethane

PBT and vPvB assessment	:	Not classified as PBT or vPvB

12.6 Other adverse effects

Components:
Dichloromethane

Biochemical Oxygen Demand (BOD)	:	no data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	:	Dispose of as hazardous waste in compliance with local and national regulations. Where possible recycling is preferred to disposal or incineration.
Contaminated packaging	:	Dispose of contents/container in accordance with local regulation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR	:	1593
RID	:	1593
IMDG	:	1593
IATA	:	1593

14.2 Proper shipping name

ADR	:	DICHLOROMETHANE
RID	:	DICHLOROMETHANE

IMDG	:	DICHLOROMETHANE
IATA	:	Dichloromethane

14.3 Transport hazard class

ADR	:	6.1
RID	:	6.1
IMDG	:	6.1
IATA	:	6.1

14.4 Packing group

ADR		
Packaging group	:	III
Classification Code	:	T1
Hazard identification No	:	60
Labels	:	6.1
Tunnel restriction code	:	(E)
RID		
Packaging group	:	III
Classification Code	:	T1
Hazard identification No	:	60
Labels	:	6.1
IMDG		
Packaging group	:	III
Labels	:	6.1
EmS Number	:	F-A, S-A
IATA		
Packing instruction (cargo aircraft)	:	663
Packaging group	:	III
Labels	:	6.1

14.5 Environmental hazards

ADR		
Environmentally hazardous	:	no
RID		
Environmentally hazardous	:	no
IMDG		
Marine Pollutant	:	no
IATA		
Environmentally hazardous	:	no

14.6 Special precautions for user

Handle with care.

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

no data available

SECTION 15: REGULATORY INFORMATION

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

Major Accident Hazard Legislation	:	96/82/EC Update: 2003 Directive 96/82/EC does not apply

Water contaminating class (Germany) : WGK 2 water endangering

Notification status

CH INV	:	YES. The formulation contains substances listed on the Swiss Inventory
US.TSCA	:	YES. All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.
DSL	:	YES. All components of this product are on the Canadian DSL.
AICS	:	YES. On the inventory, or in compliance with the inventory
NZIoC	:	YES. On the inventory, or in compliance with the inventory
ENCS	:	YES. On the inventory, or in compliance with the inventory
ISHL	:	YES. On the inventory, or in compliance with the inventory
KECI	:	YES. On the inventory, or in compliance with the inventory
PICCS	:	YES. On the inventory, or in compliance with the inventory
IECSC	:	YES. On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.

15.2 Chemical Safety Assessment

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

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

Full text of R-phrases referred to under sections 2 and 3

R36/37/38	Irritating to eyes, respiratory system and skin.
R40	Limited evidence of a carcinogenic effect.
R67	Vapours may cause drowsiness and dizziness.

Full list of P-statements.

Prevention:

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
Storage:	
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
Disposal:	
P501	Dispose of contents/ container to an approved waste disposal plant.

Explanations for possible abbreviations mentioned in section 2

PBT : PBT: Persistent, bioaccumulative and toxic.
vPvB : vPvB: Very persistent and very bioaccumulative.
OEL : OEL: Occupational exposure limit.

Notification status explanation

CH INV	Switzerland. New notified substances and declared preparations
US.TSCA	United States TSCA Inventory
DSL	Canadian Domestic Substances List (DSL)
AICS	Australia Inventory of Chemical Substances (AICS)
NZIoC	New Zealand. Inventory of Chemical Substances
ENCS	Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL	Japan. ISHL - Inventory of Chemical Substances (METI)
KECI	Korea. Korean Existing Chemicals Inventory (KECI)
PICCS	Philippines Inventory of Chemicals and Chemical Substances (PICCS)
IECSC	China. Inventory of Existing Chemical Substances in China (IECSC)

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Annex :

1. **Manufacture, Recycling, Distribution of substance**
2. **Intermediate**
3. **Formulation & (re)packing of substances and mixtures**
4. **Use as Process chemical**
5. **Use in Paints/ Coatings (industrial)**
6. **Use in cleaning agents**
7. **Use of blowing agents in manufacture of foam**
8. **Use in/as functional fluids (industrial)**
9. **Use in Paints/Coatings**
10. **Use in cleaning agents**
11. **Use in cosmetics**
12. **Use in agrochemicals (professional)**
13. **Packing and repacking of formulations**
14. **Laboratory Reagents**
15. **Consumer use**

1. Short title of Exposure Scenario: Manufacture, Recycling, Distribution of substance

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU8, SU9: Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals**
Environmental Release Categories	:	**ERC1: Manufacture of substances**
Process categories	:	**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 Contributing scenario controlling environmental exposure for: ERC1: Manufacture of substances

Amount used

Daily amount per site	:	**8570 kg**
Annual amount per site	:	**2570 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**300**
Emission or Release Factor: Air	:	**0.000060 %**
Emission or Release Factor: Water	:	**0.000369 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use, Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**

Water	:	**Treat on-site wastewater (prior to receiving water discharge). (Effectiveness (of a measure): 93.5 %)**
Soil	:	**Soil emission controls are not applicable as there is no direct release to soil.**
Remarks	:	**Common practices vary across sites thus conservative process release estimates used.**
Water	:	**Prevent discharge of undissolved substance to or recover from wastewater.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**63,072 m3/day**
Percentage removed from waste water	:	**93.5 %**
Remarks	:	**Domestic sewage treatment is not assumed.**

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the Substance in Mixture/Article	:	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	:	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the Substance in Mixture/Article	:	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

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

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Drain or remove substance from equipment prior to break-in or maintenance. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 97 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.8 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.9 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1	EUSES		Fresh water		5.17 µg/L	0.00957
ERC1	EUSES		Marine water		0.416 µg/L	0.00214
ERC1	EUSES		Fresh water sediment		9.3 µg/kg wwt	0.00957
ERC1	EUSES		Marine sediment		0.749 µg/kg wwt	0.00214
ERC1	EUSES		Soil		0.126 µg/kg	0.000245
ERC1	EUSES		Groundwater		0.0498 µg/L	0.000092

ERC1	**EUSES**		**Sewage treatment plant**		**0.883 µg/L**	**0.000034**

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**0.01 ppm**	**0.0001**
PROC1	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**
PROC2	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC2	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.27 mg/kg/day**	**0.00006**
PROC3	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC3	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.0006**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**4.5 ppm**	**0.05**
PROC8b	**ECETOC TRA**		**Chronic**	**1.37**	**0.0003**

	v2.0 Worker		**dermal systemic exposure**	**mg/kg/day**	
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**20 ppm**	**0.2**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**

ERC1: Manufacture of substances
PROC1: Use in closed process, no likelihood of exposure
PROC15: Use as laboratory reagent
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)

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

1. Short title of Exposure Scenario: Intermediate

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU8, SU9: Manufacture of bulk, large scale chemicals (including petroleum products), Manufacture of fine chemicals**
Environmental Release Categories	:	**ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)**
Process categories	:	**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** **PROC15: Use as laboratory reagent**

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Amount used

Daily amount per site	:	**8567 kg**
Annual amount per site	:	**2570 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**300**
Emission or Release Factor: Air	:	**0.0005 %**
Emission or Release Factor: Water	:	**0.01 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use, Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP. (Effectiveness (of a measure): 93.5 %)**

Soil : **Soil emission controls are not applicable as there is no direct release to soil.**

Water : **Prevent discharge of undissolved substance to or recover from wastewater.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : **Municipal sewage treatment plant**

Flow rate of sewage treatment plant effluent : **2,000 m3/day**

Percentage removed from waste water : **93.5 %**

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures
Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

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

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Drain or remove substance from equipment prior to break-in or maintenance. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 97 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.8 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6a	EUSES		Fresh water		0.057 mg/L	0.105
ERC6a	EUSES		Marine water		0.0056 mg/L	0.029
ERC6a	EUSES		Fresh water sediment		0.102 mg/kg wet weight	0.105
ERC6a	EUSES		Marine sediment		0.01 mg/kg wet weight	0.029
ERC6a	EUSES		Soil		0.058 mg/kg dry weight	0.11
ERC6a	EUSES		Groundwater		0.012 mg/L	0.02
ERC6a	EUSES		Sewage treatment plant		0.517 mg/L	0.020

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	0.01 ppm	0.0001
PROC1	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.07 mg/kg/day	0.00001
PROC2	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	50 ppm	0.5
PROC2	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.27 mg/kg/day	0.00006
PROC3	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	10 ppm	0.1
PROC3	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.07 mg/kg/day	0.00001

PROC4	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.0006**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**4.5 ppm**	**0.05**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**

ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)
PROC1: Use in closed process, no likelihood of exposure
PROC15: Use as laboratory reagent
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

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

1. Short title of Exposure Scenario: Formulation & (re)packing of substances and mixtures

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)**
Environmental Release Categories	:	**ERC2: Formulation of preparations**
Process categories	:	**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)** **PROC15: Use as laboratory reagent**

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Activity	:	**Paint strippers**

Amount used

Daily amount per site	:	**797 kg**
Annual amount per site	:	**239 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**300**
Emission or Release Factor: Air	:	**0.025 %**
Emission or Release Factor: Water	:	**0.02 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal**

efficiency is 0%.

Water : **Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**

Soil : **Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : **Municipal sewage treatment plant**

Flow rate of sewage treatment plant effluent : **2,000 m3/day**

Percentage removed from waste water : **93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Activity : **Aerosols**

Amount used

Daily amount per site : **3334 kg**

Annual amount per site : **1000 tonnes**

Environment factors not influenced by risk management

Flow rate : **18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release

Number of emission days per year : **300**

Emission or Release Factor: Air : **0.025 %**

Emission or Release Factor: Water : **0.02 %**

Emission or Release Factor: Soil : **0 %**

Remarks : **Indoor use**

Technical conditions and measures / Organizational measures

Air : **No air emission controls required; required removal efficiency is 0%.**

Water : **Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**

Soil : **Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : **Municipal sewage treatment plant**

Flow rate of sewage treatment plant effluent : **2,000 m3/day**

Percentage removed from waste water : **93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Activity : Metal degreasers

Amount used

Daily amount per site : 3933 kg
Annual amount per site : 1180 tonnes

Environment factors not influenced by risk management

Flow rate : 18,000 m3/day

Other given operational conditions affecting environmental exposure

Continuous use/release
Number of emission days per year : 300
Emission or Release Factor: Air : 0.025 %
Emission or Release Factor: Water : 0.02 %
Emission or Release Factor: Soil : 0 %
Remarks : Indoor use

Technical conditions and measures / Organizational measures

Air : No air emission controls required; required removal efficiency is 0%.
Water : Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.
Soil : Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m3/day
Percentage removed from waste water : 93.5 %

2.1 Contributing scenario controlling environmental exposure for: ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

Activity : Coatings and paints, thinners, paint removers

Amount used

Daily amount per site : 1898 kg
Annual amount per site : 569 tonnes

Environment factors not influenced by risk management

Flow rate : 18,000 m3/day

Other given operational conditions affecting environmental exposure

Continuous use/release

Number of emission days per year : 300

Emission or Release Factor: Air : 0.01 %

Emission or Release Factor: Water : 0 %

Emission or Release Factor: Soil : 0 %

Remarks : Indoor use

Technical conditions and measures / Organizational measures

Air : No air emission controls required; required removal efficiency is 0%.

Water : Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.

Soil : Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment plant effluent : 2,000 m3/day

Percentage removed from waste water : 93.5 %

2.5 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.6 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

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

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

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

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.9 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures
Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 97 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.10 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.11 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Concentration of the Substance	**:**	**Covers the percentage of the substance in the product up**

in Mixture/Article : to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use
Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2	EUSES	Paint strippers	Fresh water		0.283 mg/L	0.524
ERC2	EUSES	Paint strippers	Marine water		0.0282 mg/L	0.145
ERC2	EUSES	Paint strippers	Fresh water sediment		0.509 mg/kg wet weight	0.524
ERC2	EUSES	Paint strippers	Marine sediment		0.0507 mg/kg wet weight	0.145
ERC2	EUSES	Paint strippers	Soil		0.308 mg/kg dry weight	0.599
ERC2	EUSES	Paint strippers	Groundwater		0.0639 mg/L	0.118
ERC2	EUSES	Paint strippers	Sewage treatment plant		2.78 mg/L	0.107
ERC2	EUSES	Aerosol	Fresh water		4.96 µg/L	0.00919
ERC2	EUSES	Aerosol	Marine water		4.00 µg/L	0.00206
ERC2	EUSES	Aerosol	Fresh water sediment		8.93 µg/kg wwt	0.00919
ERC2	EUSES	Aerosol	Marine sediment		0.72 µg/kg wwt	0.00206
ERC2	EUSES	Aerosol	Soil		1.29 µg/kg	0.00251
ERC2	EUSES	Aerosol	Groundwater		1.26 µg/L	0.00233
ERC2	EUSES	Aerosol	Sewage		1.06 µg/L	0.00004

			treatment plant			
ERC2	EUSES	Metal degreasers	Fresh water		0.259 mg/L	0.480
ERC2	EUSES	Metal degreasers	Marine water		0.029 mg/L	0.133
ERC2	EUSES	Metal degreasers	Fresh water sediment		0.467 mg/kg wet weight	0.480
ERC2	EUSES	Metal degreasers	Marine sediment		0.047 mg/kg wet weight	0.133
ERC2	EUSES	Metal degreasers	Soil		0.283 mg/kg dry weight	0.550
ERC2	EUSES	Metal degreasers	Groundwater		0.059 mg/L	0.110
ERC2	EUSES	Metal degreasers	Sewage treatment plant		2.54 mg/L	0.098
ERC2	EUSES	Adhesives, sealants	Fresh water		4.85 µg/L	0.0090
ERC2	EUSES	Adhesives, sealants	Marine water		0.39 µg/L	0.0020
ERC2	EUSES	Adhesives, sealants	Fresh water sediment		8.74 µg/kg wwt	0.0090
ERC2	EUSES	Adhesives, sealants	Marine sediment		0.701 µg/kg wwt	0.0020
ERC2	EUSES	Adhesives, sealants	Soil		0.419 µg/kg	0.0073
ERC2	EUSES	Adhesives, sealants	Groundwater		0.440 µg/L	0.0008
ERC2	EUSES	Adhesives, sealants	Sewage treatment plant		0 mg/L	0

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC3	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	10 ppm	0.1
PROC3	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.07 mg/kg/day	0.00001
PROC4	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	10 ppm	0.1
PROC4	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	1.37 mg/kg/day	0.0003

PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**25 ppm**	**0.25**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.0006**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**25 ppm**	**0.25**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.0006**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**4.5 ppm**	**0.05**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**20 ppm**	**0.2**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**

ERC2: Formulation of preparations
PROC15: Use as laboratory reagent
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)

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

1. Short title of Exposure Scenario: Use as Process chemical

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU5, SU9: Manufacture of textiles, leather, fur, Manufacture of fine chemicals**
Environmental Release Categories	:	**ERC4: Industrial use of processing aids in processes and products, not becoming part of articles**
Process categories	:	**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** **PROC10: Roller application or brushing** **PROC15: Use as laboratory reagent**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity	:	**solvents**

Amount used

Daily amount per site	:	**24100 kg**
Annual amount per site	:	**2410 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**100**
Emission or Release Factor: Air	:	**0.669 %**
Emission or Release Factor: Water	:	**0.00154 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use, Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	**:**	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	**:**	**2,000 m3/day**
Percentage removed from waste water	**:**	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity	**:**	**Extraction agents**

Amount used

Daily amount per site	**:**	**36712 kg**
Annual amount per site	**:**	**13400 tonnes**

Environment factors not influenced by risk management

Flow rate	**:**	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	**:**	**365**
Emission or Release Factor: Air	**:**	**0.000706 %**
Emission or Release Factor: Water	**:**	**0.00529 %**
Emission or Release Factor: Soil	**:**	**0 %**
Remarks	**:**	**Indoor use, Used in closed system**

Technical conditions and measures / Organizational measures

Air	**:**	**No air emission controls required; required removal efficiency is 0%.**
Water	**:**	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	**:**	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	**:**	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	**:**	**2,000 m3/day**
Percentage removed from waste water	**:**	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity	**:**	**Extraction agents**

Amount used

Daily amount per site : 38460 kg
Annual amount per site : 3846 tonnes

Environment factors not influenced by risk management
Flow rate : 18,000 m3/day

Other given operational conditions affecting environmental exposure
Continuous use/release
Number of emission days per year : 100
Emission or Release Factor: Air : 0.114 %
Emission or Release Factor: Water : 0.095 %
Emission or Release Factor: Soil : 0 %
Remarks : Indoor use, Used in closed system

Technical conditions and measures / Organizational measures
Air : No air emission controls required; required removal efficiency is 0%.
Water : Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.
Soil : Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to municipal sewage treatment plant
Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m3/day
Percentage removed from waste water : 93.5 %

2.4 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use
Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures
Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.6 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.8 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Product characteristics

Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated**

differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.9 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use
Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	EUSES	Process	Fresh water		0.082 mg/L	0.153

		solvent				
ERC4	**EUSES**	**Process solvent**	**Marine water**		**0.0082 mg/L**	**0.042**
ERC4	**EUSES**	**Process solvent**	**Fresh water sediment**		**0.149 mg/kg wet weight**	**0.153**
ERC4	**EUSES**	**Process solvent**	**Marine sediment**		**0.015 mg/kg wet weight**	**0.042**
ERC4	**EUSES**	**Process solvent**	**Soil**		**0.126 mg/kg dry weight**	**0.245**
ERC4	**EUSES**	**Process solvent**	**Groundwater**		**0.060 mg/L**	**0.111**
ERC4	**EUSES**	**Process solvent**	**Sewage treatment plant**		**0.776 mg/L**	**0.030**
ERC4	**EUSES**	**Extraction medium - large sites**	**Fresh water**		**11 µg/L**	**0.021**
ERC4	**EUSES**	**Extraction medium - large sites**	**Marine water**		**1.03 µg/L**	**0.005**
ERC4	**EUSES**	**Extraction medium - large sites**	**Fresh water sediment**		**0.020 mg/kg wet weight**	**0.021**
ERC4	**EUSES**	**Extraction medium - large sites**	**Marine sediment**		**0.002 mg/kg wet weight**	**0.005**
ERC4	**EUSES**	**Extraction medium - large sites**	**Soil**		**7.46 µg/kg wwt**	**0.245**
ERC4	**EUSES**	**Extraction medium - large sites**	**Groundwater**		**1.85 µg/L**	**0.003**
ERC4	**EUSES**	**Extraction medium - large sites**	**Sewage treatment plant**		**64 µg/L**	**0.0025**
ERC4	**EUSES**	**Extraction medium - small sites**	**Fresh water**		**0.185 mg/L**	**0.343**
ERC4	**EUSES**	**Extraction medium - small sites**	**Marine water**		**0.018 mg/L**	**0.093**
ERC4	**EUSES**	**Extraction medium - small sites**	**Fresh water sediment**		**0.334 mg/kg wet weight**	**0.343**
ERC4	**EUSES**	**Extraction medium - small sites**	**Marine sediment**		**0.033 mg/kg wet weight**	**0.093**
ERC4	**EUSES**	**Extraction medium - small sites**	**Soil**		**0.211 mg/kg dry weight**	**0.411**
ERC4	**EUSES**	**Extraction medium - small sites**	**Groundwater**		**0.053 mg/L**	**0.098**
ERC4	**EUSES**	**Extraction**	**Sewage**		**1.81 mg/L**	**0.070**

		medium - small sites	**treatment plant**			

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**0.01 ppm**	**0.0001**
PROC1	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**
PROC2	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC2	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.27 mg/kg/day**	**0.00006**
PROC3	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC3	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC10	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**25 ppm**	**0.25**
PROC10	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**5.49 mg/kg/day**	**0.001**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC15	**ECETOC TRA v2.0 Worker**		**Chronic dermal**	**0.07 mg/kg/day**	**0.00001**

			systemic exposure		

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
PROC1: Use in closed process, no likelihood of exposure
PROC10: Roller application or brushing
PROC15: Use as laboratory reagent
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

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

1. Short title of Exposure Scenario: Use in Paints/ Coatings (industrial)

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU11, SU18: Manufacture of rubber products, Manufacture of furniture**
Environmental Release Categories	:	**ERC4: Industrial use of processing aids in processes and products, not becoming part of articles**
Process categories	:	**PROC7: Industrial spraying PROC10: Roller application or brushing**
Activity	:	**Use in coatings (paints, adhesives, sealants), industrial**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**10720 kg**
Annual amount per site	:	**1072 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**100**
Emission or Release Factor: Air	:	**0.95 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use, Used in closed system**

Technical conditions and measures / Organizational measures

Water	:	**Ensure all waste water is collected and treated via a WWTP.**
Soil	:	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity : Adhesives

Amount used
Daily amount per site : 6900 kg
Annual amount per site : 2070 tonnes

Environment factors not influenced by risk management
Flow rate : 18,000 m3/day

Other given operational conditions affecting environmental exposure
Continuous use/release
Number of emission days per year : 300
Emission or Release Factor: Air : 0.006 %
Emission or Release Factor: Water : 0 %
Emission or Release Factor: Soil : 0 %
Remarks : Indoor use, Used in closed system

Technical conditions and measures / Organizational measures
Water : Ensure all waste water is collected and treated via a WWTP.
Soil : Soil emission controls are not applicable as there is no direct release to soil.

Conditions and measures related to municipal sewage treatment plant
Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m3/day
Percentage removed from waste water : 93.5 %

2.3 Contributing scenario controlling worker exposure for: PROC7: Industrial spraying

Activity : Aerosols, Paint/coatings
Product characteristics
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use
Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures
Carry out in a vented booth provided with laminar airflow. (Effectiveness (of a measure): 95 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC7: Industrial spraying

Activity	:	**Aerosols, Mould release agents**
Product characteristics		
Concentration of the Substance in Mixture/Article	:	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	:	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Carry out in a vented booth provided with laminar airflow. (Effectiveness (of a measure): 95 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity	:	**Adhesives, sealants**
Product characteristics		
Concentration of the Substance in Mixture/Article	:	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	:	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of**

occupational hygiene is implemented.

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	EUSES	Aerosol	Fresh water		4.96 µg/L	0.0092
ERC4	EUSES	Aerosol	Marine water		0.40 µg/L	0.0021
ERC4	EUSES	Aerosol	Fresh water sediment		8.93 µg/kg wwt	0.0092
ERC4	EUSES	Aerosol	Marine sediment		0.72 µg/kg wwt	0.0021
ERC4	EUSES	Aerosol	Soil		0.045 mg/kg dry weight	0.087
ERC4	EUSES	Aerosol	Groundwater		0.047 mg/L	0.087
ERC4	EUSES	Aerosol	Sewage treatment plant		1.06 µg/L	0.00004
ERC4	EUSES	Adhesives	Fresh water		4.85 µg/L	0.153
ERC4	EUSES	Adhesives	Marine water		0.39 µg/L	0.042
ERC4	EUSES	Adhesives	Fresh water sediment		8.74 µg/kg wwt	0.153
ERC4	EUSES	Adhesives	Marine sediment		0.702 µg/kg wwt	0.042
ERC4	EUSES	Adhesives	Soil		2.05	0.004
ERC4	EUSES	Adhesives	Groundwater		2.15 µg/L	0.004
ERC4	EUSES	Adhesives	Sewage treatment plant		0 mg/L	0

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC7	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	25 ppm	0.25
PROC7	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	8.57 mg/kg/day	0.002
PROC7	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	25 ppm	0.25
PROC7	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	8.57 mg/kg/day	0.002
PROC10	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	25 ppm	0.25
PROC10	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	5.49 mg/kg/day	0.001

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
PROC10: Roller application or brushing
PROC7: Industrial spraying

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

1. Short title of Exposure Scenario: Use in cleaning agents

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU5, SU7, SU12, SU13, SU17: Manufacture of textiles, leather, fur, Printing and reproduction of recorded media, Manufacture of plastics products, including compounding and conversion, Manufacture of other non-metallic mineral products, e.g. plasters, cement, General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment**
Environmental Release Categories	:	**ERC4, ERC7: Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of substances in closed systems**
Process categories	:	**PROC0: Other Process or activity 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 PROC7: Industrial spraying PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity	:	**Aerosols, Metal degreasers**

Amount used

Daily amount per site	:	**59000 kg**
Annual amount per site	:	**1180 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**20**
Emission or Release Factor: Air	:	**0.3 %**
Emission or Release Factor: Water	:	**0.0001 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use, Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**

Water	**:**	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	**:**	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	**:**	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	**:**	**2,000 m3/day**
Percentage removed from waste water	**:**	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Activity	**:**	**Paint strippers**

Amount used

Daily amount per site	**:**	**140500 kg**
Annual amount per site	**:**	**2810 tonnes**

Environment factors not influenced by risk management

Flow rate	**:**	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	**:**	**20**
Emission or Release Factor: Air	**:**	**0.3 %**
Emission or Release Factor: Water	**:**	**0.0001 %**
Emission or Release Factor: Soil	**:**	**0 %**
Remarks	**:**	**Used in closed system**

Technical conditions and measures / Organizational measures

Air	**:**	**No air emission controls required; required removal efficiency is 0%.**
Water	**:**	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	**:**	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	**:**	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	**:**	**2,000 m3/day**
Percentage removed from waste water	**:**	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC7: Industrial use of substances in closed systems

Activity	:	**Cleaning agent / functional fluid**

Amount used

Daily amount per site	:	**10720 kg**
Annual amount per site	:	**1072 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**20**
Emission or Release Factor: Air	:	**0.01 %**
Emission or Release Factor: Water	:	**0.001 %**
Emission or Release Factor: Soil	:	**0.001 %**
Remarks	:	**Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.4 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity	:	**Industrial surface cleaning, metal cleaning (vapour degreasing)**

Product characteristics

Concentration of the Substance in Mixture/Article	:	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	:	**Covers daily exposures up to 8 hours (unless stated differently).**

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures
Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity	**:**	**Raw leather cleaning**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.6 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity	**:**	**Cleaning agent**
Product characteristics		

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use
Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Activity : **Cleaning agent**
Product characteristics
Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use
Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.8 Contributing scenario controlling worker exposure for: PROC7: Industrial spraying

Activity : Paint strippers

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.9 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : Manual use as cleaning agent

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear

gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.10 Contributing scenario controlling worker exposure for: PROC13: Treatment of articles by dipping and pouring

Activity	**:**	**Paint stripping / Metal cleaning**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.11 Contributing scenario controlling worker exposure for: PROC13: Treatment of articles by dipping and pouring

Activity	**:**	**Paint stripping / Metal cleaning**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid carrying out operation for more than 1 hour., Avoid direct skin contact with product.

Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	EUSES	Metal degreasers	Fresh water		6.40 µg/L	0.012
ERC4	EUSES	Metal degreasers	Marine water		0.544 µg/L	0.0028
ERC4	EUSES	Metal degreasers	Fresh water sediment		12 µg/kg wwt	0.012
ERC4	EUSES	Metal degreasers	Marine sediment		0.980 µg/kg wwt	0.0028
ERC4	EUSES	Metal degreasers	Soil		2.81 µg/kg wwt	0.00546
ERC4	EUSES	Metal degreasers	Groundwater		1.51 µg/L	0.00278
ERC4	EUSES	Metal degreasers	Sewage treatment plant		16 µg/L	0.00062
ERC4	EUSES	Paint strippers	Fresh water		6.42 µg/L	0.012
ERC4	EUSES	Paint strippers	Marine water		0.564 µg/L	0.0028
ERC4	EUSES	Paint strippers	Fresh water sediment		12 µg/kg wwt	0.012
ERC4	EUSES	Paint strippers	Marine sediment		0.983 µg/kg wwt	0.0028
ERC4	EUSES	Paint strippers	Soil		2.85 µg/kg wwt	0.00553
ERC4	EUSES	Paint strippers	Groundwater		1.52 µg/L	0.00281
ERC4	EUSES	Paint strippers	Sewage treatment plant		16 µg/L	0.00062
ERC7	EUSES		Fresh water		6.52 µg/L	0.012
ERC7	EUSES		Marine water		0.556 µg/L	0.0029
ERC7	EUSES		Fresh water sediment		12.1 µg/kg wwt	0.012
ERC7	EUSES		Marine sediment		1.00 µg/kg wwt	0.0029
ERC7	EUSES		Soil		1.86 µg/kg	0.00361

					wwt	
ERC7	EUSES		Groundwater		0.396 µg/L	0.00733
ERC7	EUSES		Sewage treatment plant		17 µg/L	0.00066

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC2	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	50 ppm	0.5
PROC2	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	1.37 mg/kg/day	0.00006
PROC3	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	10 ppm	0.1
PROC3	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.34 mg/kg/day	0.00001
PROC3	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	10 ppm	0.1
PROC3	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.34 mg/kg/day	0.00001
PROC4	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	10 ppm	0.1
PROC4	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	1.37 mg/kg/day	0.0003
PROC7	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	50 ppm	0.5
PROC7	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	42.86 mg/kg/day	0.002
PROC10	ECETOC TRA v2.0 Worker		Chronic inhalation	25 ppm	0.25

			systemic exposure		
PROC10	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**27.43 mg/kg/day**	**0.001**
PROC13	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**25 ppm**	**0.25**
PROC13	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**13.71 mg/kg/day**	**0.0006**
PROC10	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC10	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**13.71 mg/kg/day**	**0.0006**

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC7: Industrial use of substances in closed systems
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
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
PROC7: Industrial spraying

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

1. Short title of Exposure Scenario: Use of blowing agents in manufacture of foam

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU 3: Industrial Manufacturing (all)**
Environmental Release Categories	:	**ERC4: Industrial use of processing aids in processes and products, not becoming part of articles**
Process categories	:	**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** **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)** **PROC12: Use of blowing agents in manufacture of foam**

2.1 Contributing scenario controlling environmental exposure for: ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Amount used

Daily amount per site	:	**3183 kg**
Annual amount per site	:	**955 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**300**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**0.001 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	**:**	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	**:**	**2,000 m3/day**
Percentage removed from waste water	**:**	**93.5 %**

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Activity	**:**	**Surface treatment**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 25 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity	**:**	**Surface treatment**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 25 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity	**:**	**Cleaning**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 25 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Activity	**:**	**Cleaning agent**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 25 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.6 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Activity : **Cleaning agent**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 25 %.**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Activity : **Cleaning agent**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 25 %.**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Limit the substance content in the product to 25 %., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.8 Contributing scenario controlling worker exposure for: PROC12: Use of blowing agents in manufacture of foam

Activity : **Cleaning agent**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 25 %.**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	EUSES		Fresh water		15 µg/L	0.028
ERC4	EUSES		Marine water		1.42 µg/L	0.0073
ERC4	EUSES		Fresh water sediment		27 µg/kg wwt	0.028
ERC4	EUSES		Marine sediment		2.56 µg/kg wwt	0.0073
ERC4	EUSES		Soil		0.048 mg/kg dry weight	0.093
ERC4	EUSES		Groundwater		0.040 mg/L	0.748
ERC4	EUSES		Sewage treatment plant		0.103 µg/L	0.00398

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	0.01 ppm	0.0001
PROC1	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.04 mg/kg/day	0.00001
PROC2	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	30 ppm	0.3
PROC2	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.16 mg/kg/day	0.00003
PROC3	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	60 ppm	0.6
PROC3	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.04 mg/kg/day	0.00001
PROC4	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	60 ppm	0.6
PROC4	ECETOC TRA v2.0 Worker		Chronic dermal	0.82 mg/kg/day	0.0002

			systemic exposure		
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**90 ppm**	**0.9**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.82 mg/kg/day**	**0.0002**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**12 ppm**	**0.12**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.82 mg/kg/day**	**0.0002**
PROC12	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**60 ppm**	**0.6**
PROC12	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.04 mg/kg/day**	**0.00001**

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
PROC1: Use in closed process, no likelihood of exposure
PROC12: Use of blowing agents in manufacture of foam
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
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)

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

1. Short title of Exposure Scenario: Use in/as functional fluids (industrial)

Main User Groups	:	**SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites**
Sectors of end-use	:	**SU 3: Industrial Manufacturing (all)**
Environmental Release Categories	:	**ERC7: Industrial use of substances in closed systems**
Process categories	:	**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**

2.1 Contributing scenario controlling environmental exposure for: ERC7: Industrial use of substances in closed systems

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**500 kg**
Annual amount per site	:	**10 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Continuous use/release		
Number of emission days per year	:	**20**
Emission or Release Factor: Air	:	**0.01 %**
Emission or Release Factor: Water	:	**0.001 %**
Emission or Release Factor: Soil	:	**0.001 %**
Remarks	:	**Used in closed system**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste	:	**93.5 %**

water

2.2 Contributing scenario controlling worker exposure for: PROC1: Use in closed process, no likelihood of exposure

Activity : **Surface treatment**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.3 Contributing scenario controlling worker exposure for: PROC2: Use in closed, continuous process with occasional controlled exposure

Activity : **Surface treatment**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Handle substance within a closed system.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC3: Use in closed batch process (synthesis or formulation)

Activity	**:**	**Cleaning**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Handle substance within a predominantly closed system provided with extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Activity	**:**	**Cleaning agent**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
	:	**, Assumes use at not more than 20°C above ambient**

temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC7	EUSES		Fresh water		6.52 µg/L	0.012
ERC7	EUSES		Marine water		0.556 µg/L	0.0029
ERC7	EUSES		Fresh water sediment		12.1 µg/kg wwt	0.012
ERC7	EUSES		Marine sediment		1.00 µg/kg wwt	0.0029
ERC7	EUSES		Soil		1.86 µg/kg wwt	0.00361
ERC7	EUSES		Groundwater		0.396 µg/L	0.00733
ERC7	EUSES		Sewage treatment plant		17 µg/L	0.00066

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	0.01 ppm	0.0001
PROC1	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.07 mg/kg/day	0.00001
PROC2	ECETOC TRA		Chronic	50 ppm	0.5

	v2.0 Worker		**inhalation systemic exposure**		
PROC2	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.27 mg/kg/day**	**0.00006**
PROC3	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC3	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**0.07 mg/kg/day**	**0.00001**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**10 ppm**	**0.1**
PROC4	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**

ERC7: Industrial use of substances in closed systems
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

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

1. Short title of Exposure Scenario: Use in Paints/Coatings

Main User Groups	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Sectors of end-use	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Environmental Release Categories	:	**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**
Process categories	:	**PROC10: Roller application or brushing** **PROC11: Non industrial spraying**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**6.14 kg**
Annual amount per site	:	**2.24 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Adhesives**
Amount used		
Daily amount per site	:	**11.4 kg**
Annual amount per site	:	**4.14 tonnes**
Environment factors not influenced by risk management		
Flow rate	:	**18,000 m3/day**
Other given operational conditions affecting environmental exposure		
Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**
Technical conditions and measures / Organizational measures		
Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**
Conditions and measures related to municipal sewage treatment plant		
Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.3 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity	:	**Paint/coatings, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	:	**Limit the substance content in the mixture to 50 %.**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	:	**Covers daily exposures up to 8 hours (unless stated differently).**
Other operational conditions affecting workers exposure		

Outdoor / Indoor : **Indoor**
: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 90 %)

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : **Paint/coatings, Outdoor**
Product characteristics
Concentration of the Substance in Mixture/Article : **Limit the substance content in the mixture to 50 %.**
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use
Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure
Outdoor / Indoor : **Outdoor**
: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effectiveness (of a measure): 30 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Ensure operation is undertaken outdoors., Avoid carrying out operation for more than 1 hour.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : **Adhesives, sealants, Indoor**
Product characteristics
Concentration of the Substance in Mixture/Article : **Limit the substance content in the mixture to 50 %.**
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use
Remarks : **Covers daily exposures up to 8 hours (unless stated**

differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 80 %)

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.6 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity	**:**	**Paint/coatings, Aerosols, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Limit the substance content in the mixture to 50 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid carrying out operation for more than 4 hours.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity	**:**	**Paint/coatings, Aerosols, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Limit the substance content in the mixture to 50 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effectiveness (of a measure): 30 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES		Fresh water		12 µg/L	0.022
ERC8a	EUSES		Marine water		1.15 µg/L	0.00593
ERC8a	EUSES		Fresh water sediment		22 µg/kg wwt	0.022
ERC8a	EUSES		Marine sediment		2.06 µg/kg wwt	0.00593
ERC8a	EUSES		Soil		8.40 µg/kg wwt	0.016
ERC8a	EUSES		Groundwater		1.74 µg/L	0.00322
ERC8a	EUSES		Sewage treatment plant		76 µg/L	0.00293
ERC8a	EUSES		Fresh water		19 µg/L	0.035
ERC8a	EUSES		Marine water		1.85 µg/L	0.00954
ERC8a	EUSES		Fresh water sediment		35 µg/kg wwt	0.035
ERC8a	EUSES		Marine sediment		3.33 µg/kg wwt	0.00954

ERC8a	**EUSES**		**Soil**		**16 µg/kg wwt**	**0.00563**
ERC8a	**EUSES**		**Groundwater**		**3.35 µg/L**	**0.00619**
ERC8a	**EUSES**		**Sewage treatment plant**		**0.146 mg/L**	**0.00564**

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.001**
PROC10	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC10	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.001**
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.001**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**60 ppm**	**0.6**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**10.71 mg/kg/day**	**0.002**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**10.71 mg/kg/day**	**0.002**

ERC8a: Wide dispersive indoor use of processing aids in open systems

ERC8d: Wide dispersive outdoor use of processing aids in open systems
PROC10: Roller application or brushing
PROC11: Non industrial spraying

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

1. Short title of Exposure Scenario: Use in cleaning agents

Main User Groups	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Sectors of end-use	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Environmental Release Categories	:	**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**
Process categories	:	**PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Metal degreasers**

Amount used

Daily amount per site	:	**6.47 kg**
Annual amount per site	:	**2.36 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Paint strippers**
Amount used		
Daily amount per site	:	**15.4 kg**
Annual amount per site	:	**5.62 tonnes**
Environment factors not influenced by risk management		
Flow rate	:	**18,000 m3/day**
Other given operational conditions affecting environmental exposure		
Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**
Technical conditions and measures / Organizational measures		
Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**
Conditions and measures related to municipal sewage treatment plant		
Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.3 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity	:	**Cleaning agent, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	:	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	:	**Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity	**:**	**Cleaning agent, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
Other operational conditions affecting workers exposure		
Outdoor / Indoor	**:**	**Outdoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : **Paint stripper & graffiti remover, Indoor**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor : **Indoor**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : **Paint stripper & graffiti remover, Outdoor**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor : **Outdoor**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.7 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity	**:**	**Paint stripper & graffiti remover, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
Other operational conditions affecting workers exposure		
Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 95 %)

2.8 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity	**:**	**Paint stripper & graffiti remover, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor : **Outdoor**
: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Ensure operation is undertaken outdoors., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 95 %)

2.9 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity : **Degreasing agent, Aerosols, Indoor**

Product characteristics
Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use
Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure
Outdoor / Indoor : **Indoor**
: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 95 %)

2.10 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity : Degreasing agent, Aerosols, Outdoor

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

Wear a full face respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 95 %)

2.11 Contributing scenario controlling worker exposure for: PROC11,: Non industrial spraying, Option 1

Activity : Paint strippers

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee

training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.12 Contributing scenario controlling worker exposure for: PROC11,: Non industrial spraying, Option 2

Activity : Paint strippers

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES	Metal degreasers	Fresh water		13 µg/L	0.024
ERC8a	EUSES	Metal degreasers	Marine water		1.19 µg/L	0.00613
ERC8a	EUSES	Metal degreasers	Fresh water sediment		23 µg/kg wwt	0.024
ERC8a	EUSES	Metal degreasers	Marine sediment		2.14 µg/kg wwt	0.00613
ERC8a	EUSES	Metal degreasers	Soil		8.86 µg/kg wwt	0.017
ERC8a	EUSES	Metal	Groundwate		1.84 µg/L	0.00341

		degreasers	**r**			
ERC8a	**EUSES**	**Metal degreasers**	**Sewage treatment plant**		**80 µg/L**	**0.00308**
ERC8a	**EUSES**	**Paint strippers**	**Fresh water**		**24 µg/L**	**0.044**
ERC8a	**EUSES**	**Paint strippers**	**Marine water**		**2.30 µg/L**	**0.012**
ERC8a	**EUSES**	**Paint strippers**	**Fresh water sediment**		**43 µg/kg wwt**	**0.044**
ERC8a	**EUSES**	**Paint strippers**	**Marine sediment**		**4.14 µg/kg wwt**	**0.012**
ERC8a	**EUSES**	**Paint strippers**	**Soil**		**21 µg/kg wwt**	**0.041**
ERC8a	**EUSES**	**Paint strippers**	**Groundwater**		**4.37 µg/L**	**0.00809**
ERC8a	**EUSES**	**Paint strippers**	**Sewage treatment plant**		**191 µg/L**	**0.00737**

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**30 ppm**	**0.3**
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**5.49 mg/kg/day**	**0.001**
PROC10	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC10	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic exposure**	**5.49 mg/kg/day**	**0.001**
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC10	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**5.49 mg/kg/day**	**0.001**
PROC10	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC10	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic**	**5.49 mg/kg/day**	**0.001**

			exposure		
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**21.43 mg/kg/day**	**0.005**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic exposure**	**21.43 mg/kg/day**	**0.005**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**21.43 mg/kg/day**	**0.005**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic exposure**	**21.43 mg/kg/day**	**0.005**
PROC13	**ECETOC TRA v2.0 Worker**	**Option 1**	**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC13	**ECETOC TRA v2.0 Worker**	**Option 1**	**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.001**
PROC13	**ECETOC TRA v2.0 Worker**	**Option 2**	**Chronic inhalation systemic exposure**	**25 ppm**	**0.25**
PROC13	**ECETOC TRA v2.0 Worker**	**Option 2**	**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.001**

ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8d: Wide dispersive outdoor use of processing aids in open systems
PROC10: Roller application or brushing
PROC11: Non industrial spraying
PROC13: Treatment of articles by dipping and pouring

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

1. Short title of Exposure Scenario: Use in cosmetics

Main User Groups	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Sectors of end-use	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Environmental Release Categories	:	**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**6.14 kg**
Annual amount per site	:	**2.24 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES		Fresh water		12 µg/L	0.022
ERC8a	EUSES		Marine water		1.15 µg/L	0.00593
ERC8a	EUSES		Fresh water sediment		22 µg/kg wwt	0.022
ERC8a	EUSES		Marine sediment		2.06 µg/kg wwt	0.00593
ERC8a	EUSES		Soil		8.40 µg/kg wwt	0.016
ERC8a	EUSES		Groundwater		1.74 µg/L	0.00322
ERC8a	EUSES		Sewage treatment plant		76 µg/L	0.00293

ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8d: Wide dispersive outdoor use of processing aids in open systems

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

1. Short title of Exposure Scenario: Use in agrochemicals (professional)

Main User Groups	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Sectors of end-use	:	**SU1: Agriculture, forestry, fishery**
Environmental Release Categories	:	**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**
Process categories	:	**PROC11: Non industrial spraying**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**6.14 kg**
Annual amount per site	:	**2.24 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.2 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity : Insecticide, Aerosols, Indoor

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 25 %.

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.3 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity : Insecticide, Aerosols, Indoor

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 25 %.

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Technical conditions and measures

Ensure that enough fresh air is supplied to dilute and remove dusts, fumes or vapours. Between 5 and 15 air changes per hour are recommended, with a through draught. (Effectiveness (of a measure): 70 %)

Segregate the activity away from other operations. (Effectiveness (of a measure): 50 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear

gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop., Avoid carrying out operation for more than 4 hours.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity	**:**	**Insecticide, Aerosols, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 25 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
Other operational conditions affecting workers exposure		
Outdoor / Indoor	**:**	**Outdoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Ensure operation is undertaken outdoors., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)
Wear a respirator conforming to EN140 with Type A filter or better. (Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC11: Non industrial spraying

Activity	**:**	**Insecticide, Aerosols, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 25 %.**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor : **Outdoor**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. (Effectiveness (of a measure): 95 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES		Fresh water		12 µg/L	0.022
ERC8a	EUSES		Marine water		1.15 µg/L	0.00593
ERC8a	EUSES		Fresh water sediment		22 µg/kg wwt	0.022
ERC8a	EUSES		Marine sediment		2.06 µg/kg wwt	0.00593
ERC8a	EUSES		Soil		8.40 µg/kg wwt	0.016
ERC8a	EUSES		Groundwater		1.74 µg/L	0.00322
ERC8a	EUSES		Sewage treatment plant		76 µg/L	0.00293

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC11	ECETOC TRA v2.0 Worker	Indoor	Chronic inhalation	60 ppm	0.6

			systemic exposure		
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**12.86 mg/kg/day**	**0.003**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic inhalation systemic exposure**	**54 ppm**	**0.54**
PROC11	**ECETOC TRA v2.0 Worker**	**Indoor**	**Chronic dermal systemic exposure**	**12.86 mg/kg/day**	**0.003**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**42 ppm**	**0.42**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic exposure**	**12.86 mg/kg/day**	**0.003**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic inhalation systemic exposure**	**21 ppm**	**0.21**
PROC11	**ECETOC TRA v2.0 Worker**	**Outdoor**	**Chronic dermal systemic exposure**	**12.86 mg/kg/day**	**0.003**

ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8d: Wide dispersive outdoor use of processing aids in open systems
PROC11: Non industrial spraying

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

1. Short title of Exposure Scenario: Packing and repacking of formulations

Main User Groups	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Sectors of end-use	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Environmental Release Categories	:	**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**
Process categories	:	**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)**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**15.4 kg**
Annual amount per site	:	**5.62 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**Soil emission controls are not applicable as there is no direct release to soil.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	**:**	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	**:**	**2,000 m3/day**
Percentage removed from waste water	**:**	**93.5 %**

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

Activity	**:**	**Repackaging, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Other operational conditions affecting workers exposure		
Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop., Avoid carrying out operation for more than 4 hours.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

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

Activity	**:**	**Repackaging, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Other operational conditions affecting workers exposure		
Outdoor / Indoor	**:**	**Outdoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure
Ensure operation is undertaken outdoors., Avoid carrying out operation for more than 1 hour., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.4 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Activity	**:**	**Repackaging, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**
Frequency and duration of use		
Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**
Other operational conditions affecting workers exposure		
Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures
Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure
Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities

Activity	**:**	**Repackaging, Outdoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Other operational conditions affecting workers exposure

Outdoor / Indoor	**:**	**Outdoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors., Use dedicated equipment., Avoid carrying out operation for more than 1 hour., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.6 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Activity	**:**	**Repackaging, Indoor**
Product characteristics		
Concentration of the Substance in Mixture/Article	**:**	**Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use)	**:**	**Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks	**:**	**Covers daily exposures up to 8 hours (unless stated differently).**

Other operational conditions affecting workers exposure

Outdoor / Indoor	**:**	**Indoor**
	:	**, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Fill containers/cans at dedicated filling points supplied with local extract ventilation. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.7 Contributing scenario controlling worker exposure for: PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Activity : Repackaging, Outdoor

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor

: , Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operation is undertaken outdoors., Use dedicated equipment., Avoid carrying out operation for more than 1 hour., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES		Fresh water		0.283 mg/L	0.524
ERC8a	EUSES		Marine water		0.0282 mg/L	0.145
ERC8a	EUSES		Fresh water sediment		0.509 mg/kg wet weight	0.524
ERC8a	EUSES		Marine sediment		0.0507 mg/kg wet weight	0.145
ERC8a	EUSES		Soil		0.308 mg/kg dry weight	0.599
ERC8a	EUSES		Groundwater		0.0639 mg/L	0.118
ERC8a	EUSES		Sewage treatment plant		2.78 mg/L	0.107

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR

PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**60 ppm**	**0.6**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.0006**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**70 ppm**	**0.7**
PROC8a	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**2.74 mg/kg/day**	**0.0006**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**25 ppm**	**0.25**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC8b	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**50 ppm**	**0.5**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic inhalation systemic exposure**	**35 ppm**	**0.35**
PROC9	**ECETOC TRA v2.0 Worker**		**Chronic dermal systemic exposure**	**1.37 mg/kg/day**	**0.0003**

ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8d: Wide dispersive outdoor use of processing aids in open systems
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)

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

1. Short title of Exposure Scenario: Laboratory Reagents

Main User Groups	:	**SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)**
Sectors of end-use	:	**SU24: Scientific research and development**
Environmental Release Categories	:	**ERC8a: Wide dispersive indoor use of processing aids in open systems**
Process categories	:	**PROC10: Roller application or brushing** **PROC15: Use as laboratory reagent**

2.1 Contributing scenario controlling environmental exposure for: ERC8a: Wide dispersive indoor use of processing aids in open systems

Activity	:	**Aerosols**

Amount used

Daily amount per site	:	**704 kg**
Annual amount per site	:	**257 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**0.5 %**
Emission or Release Factor: Water	:	**0.5 %**
Emission or Release Factor: Soil	:	**0 %**
Remarks	:	**Indoor use**

Technical conditions and measures / Organizational measures

Air	:	**No air emission controls required; required removal efficiency is 0%.**
Water	:	**Ensure all waste water is collected and treated via a WWTP., Prevent discharge of undissolved substance to or recover from wastewater.**
Soil	:	**No soil emission controls required.**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.2 Contributing scenario controlling worker exposure for: PROC10: Roller application or brushing

Activity : **Coatings and paints, thinners, paint removers, Indoor**

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Technical conditions and measures

Provide extraction ventilation at points where emissions occur. (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid carrying out operation for more than 4 hours., Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 90 %)

2.3 Contributing scenario controlling worker exposure for: PROC15: Use as laboratory reagent

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**

Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Frequency and duration of use

Remarks : **Covers daily exposures up to 8 hours (unless stated differently).**

: **, Assumes use at not more than 20°C above ambient temperature., Assumes a good basic standard of occupational hygiene is implemented.**

Organisational measures to prevent /limit releases, dispersion and exposure

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.

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

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES		Fresh water		5.77 µg/L	0.011
ERC8a	EUSES		Marine water		0.481 µg/L	0.00248
ERC8a	EUSES		Fresh water sediment		10 µg/kg wwt	0.011
ERC8a	EUSES		Marine sediment		0.865 µg/kg wwt	0.00248
ERC8a	EUSES		Soil		1.02 µg/kg wwt	0.00199
ERC8a	EUSES		Groundwater		0.221 µg/L	0.000409
ERC8a	EUSES		Sewage treatment plant		9.13 µg/L	0.000353

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC10	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	60 ppm	0.6
PROC10	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	5.49 mg/kg/day	0.0012
PROC15	ECETOC TRA v2.0 Worker		Chronic inhalation systemic exposure	50 ppm	0.5
PROC15	ECETOC TRA v2.0 Worker		Chronic dermal systemic exposure	0.07 mg/kg/day	0.00001

ERC8a: Wide dispersive indoor use of processing aids in open systems
PROC10: Roller application or brushing
PROC15: Use as laboratory reagent

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

1. Short title of Exposure Scenario: Consumer use

Main User Groups	:	**SU 21: Consumer uses: Private households (= general public = consumers)**
Sectors of end-use	:	**SU 21: Consumer uses: Private households (= general public = consumers)**
Environmental Release Categories	:	**ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems**
Chemical product category	:	**PC1: Adhesives, sealants** **PC8: Biocidal products (e.g. Disinfectants, pest control)** **PC9: Coatings and Paints, Fillers, Putties, Thinners** **PC27: Plant protection products** **PC35: Washing and cleaning products (including solvent based products)** **PC39: Cosmetics, personal care products**

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d: Wide dispersive indoor use of processing aids in open systems, Wide dispersive outdoor use of processing aids in open systems

Amount used

Daily amount per site	:	**15.4 kg**
Annual amount per site	:	**5.62 tonnes**

Environment factors not influenced by risk management

Flow rate	:	**18,000 m3/day**

Other given operational conditions affecting environmental exposure

Dispersive use		
Number of emission days per year	:	**365**
Emission or Release Factor: Air	:	**1 %**
Emission or Release Factor: Water	:	**1 %**
Emission or Release Factor: Soil	:	**0.01 %**

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	:	**Municipal sewage treatment plant**
Flow rate of sewage treatment plant effluent	:	**2,000 m3/day**
Percentage removed from waste water	:	**93.5 %**

2.2 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Glues from tube

Product characteristics

Concentration of the Substance in Mixture/Article : **Covers the percentage of the substance in the product up to 100 % (unless stated differently).**
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Amount used
Amount used per event : **9 gram**

Frequency and duration of use
Duration of the acitivity : **< 240 min**
Frequency of use : **52 days/year**

Human factors not influenced by risk management
Dermal exposure : **2 cm2**

Other given operational conditions affecting consumers exposure
Room size : **20 m3**
Remarks : **Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation**

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : **Avoid skin contact area greater than 2 cm2**

2.3 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants

Activity : **Use of sealants by rolling**
Product characteristics
Physical Form (at time of use) : **Liquid, vapour pressure > 10 kPa**

Amount used
Amount used per event : **10 gram**

Frequency and duration of use
Duration of the acitivity : **< 240 min**
Frequency of use : **52 days/year**

Human factors not influenced by risk management
Dermal exposure : **2 cm2**

Other given operational conditions affecting consumers exposure
Room size : **20 m3**
Remarks : **Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation**

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : **Avoid skin contact area greater than 2 cm2**

2.4 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Super glue

Product characteristics
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Amount used
Amount used per event : 0.5 gram

Frequency and duration of use
Duration of the acitivity : < 240 min
Frequency of use : 12 days/year

Human factors not influenced by risk management
Dermal exposure : 2 cm2

Other given operational conditions affecting consumers exposure
Room size : 20 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : Avoid skin contact area greater than 2 cm2

2.5 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Wood parquet glue

Product characteristics
Concentration of the Substance in Mixture/Article : Covers percentage substance in the product up to 10%.
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Amount used
Amount used per event : 0.75 kg

Frequency and duration of use
Duration of the acitivity : < 240 min
Remarks : 0.25, event(s)/year

Human factors not influenced by risk management
Dermal exposure : 110 cm2

Other given operational conditions affecting consumers exposure
Room size : 58 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : Avoid skin contact area greater than 110 cm2, Avoid using at a product concentration greater than 10%, Avoid using when windows closed

2.6 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Carpet glue

Product characteristics
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Amount used
Amount used per event : 1 kg

Frequency and duration of use
Duration of the acitivity : < 75 min
Remarks : 0.25, event(s)/year

Human factors not influenced by risk management
Dermal exposure : 110 cm2

Other given operational conditions affecting consumers exposure
Room size : 58 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : Avoid skin contact area greater than 110 cm2, Avoid using at a product concentration greater than 10%, Avoid using when windows closed

2.7 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Glue from spray

Product characteristics
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Frequency and duration of use
Duration of the acitivity : < 240 min
Frequency of use : 12 days/year

Human factors not influenced by risk management
Dermal exposure : 430 cm2

Other given operational conditions affecting consumers exposure
Room size : 20 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : Spraying away from exposed person, Avoid skin contact area greater than 430 cm2, Avoid using at a product

concentration greater than 20%

2.8 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Glue from spray (joint sealants)

Product characteristics
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Amount used
Amount used per event : 75 gram

Frequency and duration of use
Duration of the acitivity : 45 min
Frequency of use : 3 days/year

Human factors not influenced by risk management
Dermal exposure : 2 cm2

Other given operational conditions affecting consumers exposure
Room size : 10 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)
Consumer Measures : Avoid skin contact area greater than 2 cm2, Avoid using at a product concentration greater than 10%

2.9 Contributing scenario controlling consumer exposure for: PC1: Adhesives, sealants : DIY - Assembly sealants

Product characteristics
Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Amount used
Amount used per event : 390 gram

Frequency and duration of use
Duration of the acitivity : < 240 min
Frequency of use : 1 days/year

Human factors not influenced by risk management
Dermal exposure : 43 cm2

Other given operational conditions affecting consumers exposure
Room size : 20 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures	:	**Avoid skin contact area greater than 43 cm2, Avoid using at a product concentration greater than 14%, Avoid using when windows closed**

2.10 Contributing scenario controlling consumer exposure for: PC9: Coatings and Paints, Fillers, Putties, Thinners

Product characteristics

Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**

Amount used

Amount used per event	:	**279 gram**

Frequency and duration of use

Duration of the acitivity	:	**20 min**
Frequency of use	:	**2 days/year**

Other given operational conditions affecting consumers exposure

Room size	:	**34 m3**
Remarks	:	**Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation**

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures	:	**Spraying away from exposed person, Avoid using at a product concentration greater than 20%**

2.11 Contributing scenario controlling consumer exposure for: PC27: Plant protection products

Product characteristics

Physical Form (at time of use)	:	**Liquid, vapour pressure > 10 kPa**

Amount used

Amount used per event	:	**14.85 gram**

Frequency and duration of use

Duration of the acitivity	:	**< 240 min**
Frequency of use	:	**90 days/year**

Other given operational conditions affecting consumers exposure

Room size	:	**58 m3**
Remarks	:	**Assumes activities are at ambient temperature (unless stated differently)., Assumes use with typical ventilation**

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Spraying away from exposed person, Avoid using at a product concentration greater than 20%

2.12 Contributing scenario controlling consumer exposure for: PC35: Washing and cleaning products (including solvent based products)

Product characteristics

Physical Form (at time of use) : Liquid, vapour pressure > 10 kPa

Amount used

Amount used per event : 27 gram

Frequency and duration of use

Duration of the acitivity : < 60 min
Frequency of use : 1 event/day
Frequency of use : 128 days/year

Human factors not influenced by risk management

Dermal exposure : 215 cm2

Other given operational conditions affecting consumers exposure

Room size : 15 m3
Remarks : Assumes activities are at ambient temperature (unless stated differently)., Covers use under typical household ventilation

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid skin contact area greater than 215 cm2, Avoid using at a product concentration greater than 20%

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	EUSES		Fresh water		13 µg/L	0.024
ERC8a	EUSES		Marine water		1.19 µg/L	0.00613
ERC8a	EUSES		Fresh water sediment		23	0.024
ERC8a	EUSES		Marine sediment		2.14	0.00613
ERC8a	EUSES		Soil		8.86	0.017
ERC8a	EUSES		Groundwater		1.84 µg/L	0.00341

ERC8a	**EUSES**		**Sewage treatment plant**		**80 µg/L**	**0.00308**

Consumers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PC1	**Consexpo**	**DIY - Glues from tube**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Glues from tube**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Glues from tube**	**Chronic dermal systemic exposure**		**0.0006**
PC1	**Consexpo**	**Use of sealants by rolling**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**Use of sealants by rolling**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**Use of sealants by rolling**	**Chronic dermal systemic exposure**		**0.0006**
PC1	**Consexpo**	**DIY - Super glue**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Super glue**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Super glue**	**Chronic dermal systemic exposure**		**0.0006**
PC1	**Consexpo**	**DIY - Wood parquet glue**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Wood parquet glue**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Wood parquet glue**	**Chronic**		**0.0006**

			dermal systemic exposure		
PC1	**Consexpo**	**DIY - Carpet glue**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Carpet glue**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Carpet glue**	**Chronic dermal systemic exposure**		**0.0006**
PC1	**Consexpo**	**DIY - Glue from spray**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Glue from spray**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Glue from spray**	**Chronic dermal systemic exposure**		**0.0006**
PC1	**Consexpo**	**DIY - Glue from spray (joint sealants)**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Glue from spray (joint sealants)**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Glue from spray (joint sealants)**	**Chronic dermal systemic exposure**		**0.0006**
PC1	**Consexpo**	**DIY - Assembly sealants**	**Acute inhalation systemic exposure**		**0.44**
PC1	**Consexpo**	**DIY - Assembly sealants**	**Chronic inhalation systemic exposure**		**0.29**
PC1	**Consexpo**	**DIY - Assembly sealants**	**Chronic dermal systemic exposure**		**0.0006**
PC9	**Consexpo**		**Acute inhalation systemic exposure**		**0.44**

PC9	**Consexpo**		**Chronic inhalation systemic exposure**		**0.29**
PC9	**Consexpo**		**Chronic dermal systemic exposure**		**0.0006**
PC27	**Consexpo**		**Acute inhalation systemic exposure**		**0.44**
PC27	**Consexpo**		**Chronic inhalation systemic exposure**		**0.29**
PC27	**Consexpo**		**Chronic dermal systemic exposure**		**0.0006**
PC35	**Consexpo**		**Acute inhalation systemic exposure**		**0.44**
PC35	**Consexpo**		**Chronic inhalation systemic exposure**		**0.29**
PC35	**Consexpo**		**Chronic dermal systemic exposure**		**0.0006**

ERC8a: Wide dispersive indoor use of processing aids in open systems
ERC8d: Wide dispersive outdoor use of processing aids in open systems
PC1: Adhesives, sealants
PC27: Plant protection products
PC35: Washing and cleaning products (including solvent based products)
PC9: Coatings and Paints, Fillers, Putties, Thinners

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