

**METHYLENE CHLORIDE****Code : 14092****SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Chemical description : Methylene chloride , Dichloromethane , MC.  
Type of product : Pure product .  
Reach registration number : 01-2119480404-41

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

Identified use(s) : See table on the front page of the annex.  
\* Use(s) advised against : This product is not recommended for any industrial, professional or consumer use other than identified in table on the front page of the annex.  
Paint strippers containing Dichloromethane in a concentration equal to or greater than 0,1% by weight shall not be placed on the market for supply to the general public or to professionals an shall not be used by professionals after 6 June 2012 ( in accordance with Annex XVII to Regulation (EC) No 1907/2006) (59. Dichloromethane).

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

Company identification : BRENNTAG N.V. - Nijverheidslaan 38 - BE-8540 DEERLIJK  
TEL: +32(0)56/77.69.44 - FAX: +32(0)56/77.57.11  
E-MAIL: info@brenntag.be - Website: www.brenntag.be

BRENNTAG Nederland B.V. - Donker Duyvisweg 44 - NL-3316 BM DORDRECHT  
TEL: +31(0)78/65.44.944 - FAX: +31(0)78/65.44.919  
E-MAIL: info@brenntag.nl - Website: www.brenntag.nl

**1.4. Emergency telephone number**

Emergency phone number : België : Antipoison Center - Brussels  
TEL: +32(0)70/245.245

The Netherlands : National Poisoning Information Center - Bilthoven  
TEL: +31(0)30/274.88.88 (Only for the purpose of informing medical personnel in cases of acute intoxications)

**SECTION 2. Hazards identification****2.1. Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC**

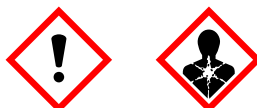
\* Irritant (Xi; R36/38)  
Carcinogenic (Carc. Cat. 3; R40)  
Other (-. R67)

**Classification according to Regulation (EC) No 1272/2008**

\* Skin irritation - Category 2 - Warning (Skin Irrit. 2; H315)  
Eye irritation - Category 2 - Warning (Eye Irrit. 2; H319)  
Specific Target Organ Toxicity - Single exposure - Narcotic effects - Category 3 - Warning (STOT SE 3; H336)  
Carcinogenicity - Category 2 - Warning (Carc. 2; H351)

**2.2. Label elements****Label in accordance with Regulation (EC) No 1272/2008**

• Dangerous ingredient(s) : Dichloromethane  
• Hazard pictogram(s)



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**SECTION 2. Hazards identification (continued)**

- Signal word : Warning
- \* • Hazard statements : H315 - Causes skin irritation. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness. H351 - Suspected of causing cancer.
- Precautionary statements
- \* - Prevention : P201 - Obtain special instructions before use. P261 - Avoid breathing vapours. P280 - Wear protective gloves, protective clothing, eye protection, face protection.
- \* - Response : P312 - Call a POISON CENTER or doctor if you feel unwell.
- \* - Disposal considerations : P501 - Dispose of contents and/or container to an approved waste disposal plant.

**2.3. Other hazards**

- Physical/chemical hazards : The product decomposes slowly by contact to water in formation of Hydrochloric acid.
- Hazards for the health : A health dangerous concentration in the air will very quickly be reached by evaporation of this substance at app. 20°C; even faster by spraying. Dichloromethane is converted to Carbon monoxide in the body, which reduces the oxygen carrying capacity of the blood.
- Hazards for the environment : No significant danger. This product is no substance or contains no PBT or vPvB (in accordance with Annex XIII).
- Hazards for the safety : Explosive mixtures of Dichloromethane and air can be formed, but are difficult to ignite.

**SECTION 3. Composition/information on ingredients**

**3.1. Substances**

Name component(s)	Weight %	CAS nr	EINECS nr	Index nr	Reach nr	CLASSIFICATION
* Dichloromethane	: > 99.8 %	75-09-2	200-838-9	602-004-00-3	01-2119480404-41	Carc. Cat. 3; R40 R67 Xi; R36/38 ----- Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H336 Carc. 2; H351

The full text of the R-phrases and (EU)H-statements is in section 16.

**SECTION 4. First aid measures**

**4.1. Description of first aid measures**

- General : In case of doubt or persistent symptoms, call a physician. Never give anything by mouth to an unconscious person.
- First Aid Measures
- \* - Inhalation : Remove victim into fresh air. Allow the affected person to rest in semi-sitting position. If not breathing, give artificial respiration. Get immediate medical advice/attention.
- \* - Skin Contact : Remove contaminated clothing. Rinse skin immediately with mild soap and plenty of water. (shower if necessary). Consult doctor if irritation develops.
- Eye Contact : Rinse immediately thoroughly and long (at least 15 min.) with plenty of water. Remove contact lenses. Consult eye doctor.

**METHYLENE CHLORIDE****Code : 14092****SECTION 4. First aid measures (continued)**

- \* - Ingestion : DO NOT INDUCE VOMITING. Rinse mouth with water.  
Get immediate medical advice/attention.

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

See section 11.

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

For specialist advice doctors should contact the NVCI or the Belgian Poison center.

**SECTION 5. Firefighting measures****5.1. Extinguishing media**

Extinguishing Media

- Suitable : Extinguishing powder , Foam , Carbon dioxide (CO<sub>2</sub>) , Water spray .  
- Unsuitable : Not known .

**5.2. Special hazards arising from the substance or mixture**

Special Exposure Hazards : Fire may liberate toxic (Chlorine, Fosgene, ...) and corrosive (Hydrochloric acid, ...) vapours.

**5.3. Advice for firefighters**

- Special Protective Equipment for Firefighters : Use self-contained breathing apparatus and wear protective clothes when in close proximity to fire.  
Special Procedures : Apply water spray or fog to cool nearby equipment. Avoid fire-fighting water to enter environment.

**SECTION 6. Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**Personal Precautions : Evacuate all personnel immediately and ventilate area.  
Avoid breathing vapour and contact with skin, eyes and clothing. Wear recommended personal protective equipment. (See section 8)**6.2. Environmental precautions**Environmental Precautions : Shut off leaks if without risks.  
Dike in the spilled product as much as possible with inert material.  
Prevent entry of product in public water, sewers or soil.  
Notify authorities if product enters sewers or public waters.**6.3. Methods and material for containment and cleaning up**Methods for Cleaning Up : Collect the spillage in closable, suitable disposal containers.  
Clean up any spills as soon as possible, using an inert absorbent material.  
Residue is to be washed down with plenty of water.**6.4. Reference to other sections**For the removal of the waste product, see section 13.  
For personal protection, see section 8.**SECTION 7. Handling and storage****7.1. Precautions for safe handling**Handling : STRONG HYGIENE !  
Avoid breathing vapour and contact with skin, eyes and clothing. Wear recommended personal protective equipment. (See section 8)  
When using, do not eat, drink or smoke.

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**SECTION 7. Handling and storage (continued)**

Emergency eye wash fountains and showers should be available in the immediate vicinity of any potential exposure.

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

- \* Storage : Keep only in the original, safely locked container in a well ventilated, cool and dark place.  
All dangerous products should be placed on a drip tray or should be barreled. Keep away from : Oxidizing agents , Strong acids , Alkali- and earthalkali-metals .  
Stabilizer : Amylene , Ethanol , 1,2-Epoxy butane .
- \* Packaging Material : Stainless steel , Carbon steel .
- Insuitable Packaging Material : Several synthetics , Aluminium (+ Alloys ) , Zinc .

**7.3. Specific end use(s)**

For identified uses, see subsection 1.2 and/or exposure scenarios.

**SECTION 8. Exposure controls/personal protection**

**8.1. Control parameters**

- \* Occupational Exposure Limits : Dichloromethane : Limit value (BE) : 50 ppm (177 mg/m<sup>3</sup>) (2014)
- Biological limit values : They will be included when available.
- \* DNELs :
  - Dichloromethane : Worker, acute - systemic effects, inhalation : 706 mg/m<sup>3</sup>
  - Dichloromethane : Worker, long-term - systemic effects, inhalation : 353 mg/m<sup>3</sup>
  - Dichloromethane : Worker, long-term - systemic effects, dermal : 12 mg/kg/ day
  - Dichloromethane : Consumer, acute - systemic effects, inhalation : 353 mg/m<sup>3</sup>
  - Dichloromethane : Consumer, long-term - systemic effects, oral : 0,06 mg/kg bw/ day
  - Dichloromethane : Consumer, long-term - systemic effects, inhalation : 88,3 mg/ m<sup>3</sup>
  - Dichloromethane : Consumer, long-term - systemic effects, dermal : 5,82 mg/kg bw/ day
- PNECs :
  - Dichloromethane : Fresh water : 0,54 mg/l
  - Dichloromethane : Marine water : 0,194 mg/l
  - Dichloromethane : Fresh water sediment : 4,47 mg/kg
  - Dichloromethane : Marine water sediment : 1,61 mg/kg
  - Dichloromethane : Soil : 0,583 mg/kg
  - Dichloromethane : Intermittent release : 0,27 mg/l
  - Dichloromethane : Sewage treatment plant : 26 mg/l

**8.2. Exposure controls**

- Engineering Measures : Ventilation , Local exhaust ( If possible through the floor ).
- Personal Protection Equipment :
  - Respiratory protection : CE-approved mask for organic vapours and solvents (type AX, brown).
  - Skin protection : Suitable protective clothing .
- \* - Hand protection : Suitable material for safety gloves (EN 374):  
The suitability of the gloves and the breakthrough time for a specific workplace should be discussed with the producers of the protective gloves.
  - material : Butyl rubber
  - thickness : 0,4 mm
  - breakthrough time : > 10'
- Eye/Face protection : Closed safety glasses or face shield.
- Environmental exposure controls : See sections 6, 7, 12 and 13.

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**SECTION 9. Physical and chemical properties**

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

Physical State (20°C)	: Liquid .
Form/Colour	: Clear , Colourless .
Odour	: Characteristic odour .
* Odour threshold	: 160 - 230 ppm
* pH value	: Not applicable.
Melting/Freezing point	: -95 °C
Boiling Point/Range (1013 hPa)	: 40 °C
Flash point	: Not applicable.
Fire hazard	: Not applicable.
* Evaporation rate	: 1,8 ( Diethyl ether = 1)
Explosion limits in air	: 13 - 22 vol. %
Vapour pressure (20°C)	: 47,5 kPa
Relative vapour density (air=1)	: 2,9
Relative density of saturated vapour/air mixture (air=1)	: 1,9
Relative density (water=1)	: 1,3
* Solubility in water	: 1,32 g/100 ml
* Log P Octanol/Water (20°C)	: 1,25
Auto-ignition temperature	: 605 °C
* Minimum ignition energy	: 9300 mJ
* Decomposition temperature	: No data available.
Viscosity (20°C)	: 0,43 mPa.s ( Dynamic )
Explosive properties	: No chemical groups associated with explosive properties .
Oxidizing properties	: No chemical groups associated with oxidizing properties .

**9.2. Other information**

Surface tension (20°C)	: 28,1 mN/m
Specific leading	: 4,3*10E3 pS/m
% Volatiles (by weight)	: > 99,8

**SECTION 10. Stability and reactivity**

**10.1. Reactivity**

Reactivity : Reacts violently with oxidizing agents and strong acids.

**10.2. Chemical stability**

Stability : Decomposes when heating above > 120 °C.  
Stabilizer : Amylene , Ethanol , 1,2-Epoxy butane .

**10.3. Possibility of hazardous reactions**

Hazardous reactions : May cause fire and explosion with many reactions.  
The substance decomposes by heating or burning in formation of toxic and corrosive vapours.

**10.4. Conditions to avoid**

Conditions to avoid : High temperatures , Direct sunlight .

**10.5. Incompatible materials**

Materials to avoid : Oxidizing agents , Strong acids , Alkali- and earthalkali-metals , Several synthetics , Aluminium (+ Alloys) , Zinc .

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**SECTION 10. Stability and reactivity (continued)**

**10.6. Hazardous decomposition products**

Hazardous Decomposition Products : Chlorine , Phosgene , Hydrochloric acid .

**SECTION 11. Toxicological information**

**11.1. Information on toxicological effects**

Acute toxicity

- \* - Inhalation : Exposure to high concentrations may cause lowering of consciousness and aberrations of heartrythm.  
Symptoms include: Dizziness , Nausea , Drowsiness , Cough , Breathing difficulties , Weakness , Unconsciousness . In serious cases: may cause death.  
• Dichloromethane : LC50 (Mouse, inhalation, 7 h) : 49000 mg/m<sup>3</sup>
- \* - Skin contact : Symptoms include: Redness , Pain .  
• Dichloromethane : LD50 (Rat, dermal) : >2000 mg/kg ( OECD Guideline 402)
- \* - Ingestion : After swallowing, some drops of liquid can enter the longs (aspiration), which may cause pneumonia.  
Symptoms include: Abdominal pain , See "Inhalation" .  
• Dichloromethane : LD50 (Rat, oral) : >2000 mg/kg ( OECD Guideline 401)
- \* Skin corrosion/irritation : Causes skin irritation. Skin contact can damage eczema.
- Serious eye damage/irritation : Causes serious eye irritation.
- Aspiration hazard : Dichloromethane is converted to Carbon monoxide in the body, which reduces the oxygen carrying capacity of the blood.
- Respiratory or skin sensitisation : Not sensitive .
- \* Carcinogenicity : Suspected of causing cancer.  
IARC: Group 2B (possibly carcinogenic to humans).
- Mutagenicity : Not listed as mutagenic .
- Reproductive toxicity : Not listed for reproductive toxicity .
- \* Specific target organ toxicity - single exposure : To human : May cause drowsiness or dizziness.
- Specific target organ toxicity - repeated exposure : To human : Listed not for organ toxicity .

**SECTION 12. Ecological information**

**12.1. Toxicity**

- \* Ecotoxicity : • Dichloromethane : LC50 (Fish, 96 h) : 193 mg/l (Pimephales promelas)  
• Dichloromethane : EC50 (Daphnia magna, 48 h) : 27 mg/l  
• Dichloromethane : NOEC (Fish, 28 d) : 83 mg/l (Pimephales promelas)  
• Dichloromethane : NOEC (Algae, 8 d) : 550 mg/l (Microcystis aeruginosa)

**12.2. Persistence and degradability**

- \* Persistence and degradability : • Dichloromethane : Persistence and degradability : Readily biodegradable .

**12.3. Bioaccumulative potential**

Bioaccumulation : • Dichloromethane : Bioaccumulation : Bioaccumulation not expected .

**12.4. Mobility in soil**

- \* Mobility : • Dichloromethane : Mobility : Product is dispersible in water.

**12.5. Results of PBT and vPvB assessment**

Evaluation : • Dichloromethane : PBT/vPvB : No

**METHYLENE CHLORIDE****Code : 14092****SECTION 12. Ecological information (continued)****12.6. Other adverse effects**

Photochemical ozone creation potential : No data available.  
Ozone depletion potential : None .  
Endocrine disrupting potential : No data available.  
Global warming potential : No data available.

**SECTION 13. Disposal considerations****13.1. Waste treatment methods**

Waste from residues/Unused products : The product has to be destroyed according to national or local legislation, by a company specialised in handling hazardous waste products.  
European list of waste products : XXXXXX - European waste product code. This code is assigned on the basis of the most current applications and can not be representative for pollutions which are arisen at the effective use of the product. The producer of the waste has to evaluate its process himself and has to grant the appropriate waste coding. See Decision 2001/118/EC.  
Removal contaminated packaging : Packing is to be used exclusively for the packing of this product. After use, empty and close the packing very carefully. In case of returned packing, the empty packing can be offered back to the supplier.

**SECTION 14. Transport information****14.1. UN number**

UN Number : 1593

**14.2. UN proper shipping name**

\* ADR/RID Name : UN 1593 Dichloromethane, 6.1, III, (E)  
ADN Name : UN 1593 Dichloromethane , 6.1, III  
IMDG Name : UN 1593 Dichloromethane , 6.1, III  
\* IATA Name : UN 1593 Dichloromethane , 6.1, III

**14.3. Transport hazard classe(s)**

Class : 6.1

**14.4. Packing group**

Packaging Group : III

**14.5. Environmental hazards**

Environmentally hazard : No  
Marine pollutant : No

**14.6. Special precautions for user**

Danger number : 60  
Hazard Label(s) : 6.1  
EmS-N° : F-A , S-A

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

Type ship : No data available.  
Pollution category : No data available.

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**SECTION 15. Regulatory information**

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

- Inventories : Australian inventory (AICS): Listed in inventory.  
 Canadian inventory (DSL): Listed in inventory.  
 Chinese inventory (IECS): Listed in inventory.  
 European inventory (EINECS): Listed in inventory.  
 Japanese inventory (ENCS): Listed in inventory.  
 Korean inventory (KECI): Listed in inventory.  
 Philippine inventory (PICCS): Listed in inventory.  
 Inventory of the United States (TSCA): Listed in inventory.
- NFPA n° : 2-1-0
- \* Relevant EU Rule(s) : Directive 98/24/EC of the Council of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work  
 Directive 1999/13/EC of the Council of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations  
 Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004 on the protection of workers from the risks related to exposure to carcinogens or mutagens at work  
 Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC  
 Decision 2001/118/EC of the Commission of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes  
 Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006  
 Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (Reach)
- \* The restrictions in Annex XVII to Regulation (EC) No 1907/2006 must be observed.
- \* National regulations
- \* - Germany : WGK : 2
- \* - Netherlands : Water damaging : 1  
 Decontamination exertion : A

**15.2. Chemical Safety Assessment**

- \* A chemical safety assessment has been carried out for the material.

**SECTION 16. Other information**

This safety data sheet has been drawn up in accordance with Regulation (EU) No 453/2010.  
 This safety data sheet is exclusively made for industrial/professional use.

\* Has changed compared to previous revision.

- \* Changes : Section 1 , Section 2 , Section 3 , Section 4 Section 7 , Section 8 , Section 9 , Section 11 , Section 12 , Section 14 , Section 15 , Section 16 .
- Sources of used key data : The information contained herein is based on the present state of our knowledge ( Producer(s) , Chemical cards , ...).  
 See also on the webaddress:  
<http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
- \* R-phrase(s) : R36/38 - Irritating to eyes and skin.  
 R40 - Limited evidence of a carcinogenic effect.



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- \* (EU)H-statement(s) : R67 - Vapours may cause drowsiness and dizziness.  
: H315 - Causes skin irritation.  
: H319 - Causes serious eye irritation.  
: H336 - May cause drowsiness or dizziness.  
: H351 - Suspected of causing cancer.
- List of abbreviations and acronyms : ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route) : European agreement concerning the international carriage of dangerous goods by road  
Carc. 2 : Carcinogenicity - Category 2  
DNEL (Derived No Effect Level) : an estimated safe exposure level  
EC50 : median Effective Concentration  
EmS (Emergency Schedule) : the first code refers to the relevant fire schedule and the second code refers to the relevant spillage schedule  
Eye Irrit. 2 : Eye irritation - Category 2  
IARC (International Agency for Research on Cancer)  
IATA (International Air Transport Association) : provisions concerning the international carriage of dangerous goods by air  
IMDG (International Maritime Dangerous Goods code)  
LC50 : median Lethal Concentration  
LD50 : median Lethal Dose  
NFPA (National Fire Protection Association) or fire diamant  
NOEC (No Observed Effect Concentration)  
NVCI : National Poisoning Information Center  
OECD : Organisation for Economic Cooperation and Development  
PBT : persistent, bioaccumulative and toxic  
PNEC (Predicted No Effect Concentration) : concentration below which exposure to a substance is not expected to cause adverse effects  
REACH : Registration, Evaluation, Authorisation and restriction of Chemicals  
RID (Règlement concernant le transport International ferroviaire des marchandises Dangereuses) : Regulation concerning the International carriage of Dangerous goods by rail  
Skin Irrit. 2 : Skin irritation - Category 2  
STOT SE 3 : Specific Target Organ Toxicity - Single exposure - Category 3  
TWA (Time-Weighted Average) : the average exposure over a specified period  
WGK (Wassergefährdungsklasse) : a German classification of substances that indicate the environmental hazard for surface water  
vPvB : very persistent and very bioaccumulative

This information is to our knowledge correct and complete on the date of issue of this safety data sheet. The information only concerns the product and does not give any guarantee for the quality and the completeness of the properties of the product, or in case of mixing or using in any other process. It remains the responsibility of the user to assure himself that the information is suitable and complete concerning the special use he makes of the product.

BRENNTAG denies all responsibility for loss or damage resulting from the use of these data.

**End of document**

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006**

**Methylene chloride**

Version 2.2

Print Date 25.02.2013

Revision Date 25.02.2013

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	NA	NA	1, 2, 3, 4, 8a, 8b, 9, 15	1	NA	ES8529
2	Use as an intermediate	3	8, 9	19	1, 2, 3, 4, 8a, 8b, 15	6a	NA	ES1944
3	Formulation & (re)packing of substances and mixtures	3	10	NA	3, 4, 5, 8a, 8b, 9, 15	2	NA	ES1946
4	Uses in coatings	3	11, 18	NA	7, 10	4	NA	ES1957
5	Uses in coatings	22	NA	NA	10, 11	8a, 8d	NA	ES1968
6	Use in Cleaning Agents	3	5, 7, 12, 13, 17	35	2, 3, 4, 7, 10, 13	4, 7	NA	ES1960
7	Use in Cleaning Agents	22	NA	35	10, 11, 13	8a, 8d	NA	ES1971
8	Use in agrochemicals	22	NA	8, 27	11	8a, 8d	NA	ES1979
9	Use as Functional Fluids	3	NA	16	1, 2, 3, 4	7	NA	ES1966
10	Use in laboratories	22	24	21	10, 15	8a	NA	ES2013
11	Use as blowing agents	3	NA	NA	1, 2, 3, 4, 8b, 9, 12	4	NA	ES1964
12	Use as extraction agent and/or processing aid	3	5, 9	NA	1, 2, 3, 4, 10, 15	4	NA	ES1953
13	Use in cosmetics	22	NA	39	11	8a, 8d	NA	ES1977
14	Consumer use	21	NA	1, 8, 9a, 9b, 9c, 27, 35, 39	NA	8a, 8d	NA	ES2015

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006**

**Methylene chloride**

Version 2.2

Print Date 25.02.2013

Revision Date 25.02.2013

**1. Short title of Exposure Scenario 1: Manufacture of substance**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	ERC1: Manufacture of substances

**2.1 Contributing scenario controlling environmental exposure for: ERC1**

Amount used	Maximum daily site tonnage (kg/day):	8570 kg
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
<p>Technical conditions and measures at process level (source) to prevent release</p> <p>Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil</p> <p>Organizational measures to prevent/limit release from the site</p>	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Domestic sewage treatment is not assumed.	

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa

**SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006**

**Methylene chloride**

Version 2.2

Print Date 25.02.2013

Revision Date 25.02.2013

Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems) Continuous process with sample collection	Handle substance within a closed system.(PROC1, PROC2)
	General exposures (closed systems) Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation. Provide extract ventilation to points where emissions occur.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur.(PROC4)
	Material transfers Bulk transfers Non-dedicated facility	Drain or remove substance from equipment prior to break-in or maintenance.(PROC8a)
	Material transfers Bulk transfers Dedicated facility	Fill containers/cans at dedicated filling points supplied with local extract ventilation. Ensure material transfers are under containment or extract ventilation.(PROC8b)
	Material transfers Drum/batch transfers Small package filling Pouring from small containers	Fill containers/cans at dedicated filling points supplied with local extract ventilation. Ensure material transfers are under containment or extract ventilation.(PROC9)
	Laboratory activities with sample collection	Handle in a fume cupboard or under extract ventilation.(PROC15)
Organisational measures to prevent /limit releases, dispersion and exposure	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.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES version 2.1 has been used to estimate environmental emissions unless otherwise indicated

**Workers**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

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

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Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
For scaling see: <http://www.ecetoc.org/tra>  
Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 2: Use as an intermediate**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals
Chemical product category	PC19: Intermediate
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
Environmental Release Categories	ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

**2.1 Contributing scenario controlling environmental exposure for: ERC6a**

Amount used	Regional use tonnage (tons/year):	2570 ton(s)/year
	Fraction of Regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	8567 kg
	Annual site tonnage (tons/year):	2570 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	5,00 .10 <sup>-4</sup>
	Emission or Release Factor: Water	0,01
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release	Air	No air emission controls required; required removal efficiency is 0%.

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Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems) Continuous process with sample collection	Handle substance within a closed system.(PROC1, PROC2)
	General exposures (closed systems) Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur.(PROC4)
	Material transfers Bulk transfers Non-dedicated facility	Drain or remove substance from equipment prior to break-in or maintenance.(PROC8a)
	Material transfers Bulk transfers Dedicated facility	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC8b)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.	
Conditions and measures related	Wear suitable gloves tested to EN374.	

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to personal protection, hygiene and health evaluation

Wash off any skin contamination immediately.

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC6a	---	Fresh water	PEC	0,283mg/L	0,524
ERC6a	---	Marine water	PEC	0,0282mg/L	0,145
ERC6a	---	Fresh water sediment	PEC	0,509mg/kg	0,524
ERC6a	---	Marine sediment	PEC	0,0507mg/kg	0,145
ERC6a	---	Soil	PEC	0,308mg/kg	0,599
ERC6a	---	Sewage treatment plant (STP)	PEC	2,78mg/L	0,107

The default values from the Reach Guidance R.16 are replaced by the values from the ESVOC2 SpERC

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	worker inhalation, long term - systemic	0,01ppm	0,0001
PROC1	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001
PROC2	---	worker inhalation, long term - systemic	50ppm	0,50
PROC2	---	Worker - dermal, long-term - systemic	0,27mg/kg/day	0,00006
PROC3	---	worker inhalation, long term - systemic	10ppm	0,10
PROC3	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001
PROC4	---	worker inhalation, long term - systemic	10ppm	0,10
PROC4	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC8a	---	worker inhalation, long term - systemic	50ppm	0,5
PROC8a	---	Worker - dermal, long-	2,74mg/kg/day	0,0006



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		term - systemic		
PROC8b	---	worker inhalation, long term - systemic	4,50ppm	0,05
PROC8b	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC15	---	worker inhalation, long term - systemic	50ppm	0,5
PROC15	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 3: 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)
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
Environmental Release Categories	ERC2: Formulation of preparations

**2.1 Contributing scenario controlling environmental exposure for: ERC2**

Paint strippers

Amount used	Regional use tonnage (tons/year):	2810 ton(s)/year
	Fraction of Regional tonnage used locally:	0,085
	Maximum daily site tonnage (kg/day):	797 kg
	Annual site tonnage (tons/year):	239 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,025
	Emission or Release Factor: Water	0,02
	Emission or Release Factor: Soil	0

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	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling environmental exposure for: ERC2**

Relevant for aerosol

Amount used	Regional use tonnage (tons/year):	1120 ton(s)/year
	Fraction of Regional tonnage used locally:	0,893
	Maximum daily site tonnage (kg/day):	3334 kg
	Annual site tonnage (tons/year):	1000 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,025
	Emission or Release Factor: Water	0,02
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release	Air	No air emission controls required; required removal efficiency is 0%.

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Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.3 Contributing scenario controlling environmental exposure for: ERC2**

Metal degreasers

Amount used	Regional use tonnage (tons/year):	1180 ton(s)/year
	Fraction of Regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	3933 kg
	Annual site tonnage (tons/year):	1180 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,025
	Emission or Release Factor: Water	0,02
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is

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releases to soil Organizational measures to prevent/limit release from the site		no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.4 Contributing scenario controlling environmental exposure for: ERC2**

Relevant for Adhesives

Amount used	Regional use tonnage (tons/year):	2070 ton(s)/year
	Fraction of Regional tonnage used locally:	0,275
	Maximum daily site tonnage (kg/day):	1898 kg
	Annual site tonnage (tons/year):	569 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,01
	Emission or Release Factor: Water	0
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.5 Contributing scenario controlling worker exposure for: PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa

Frequency and duration of use	Frequency of use	8 hours/day
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Other operational conditions affecting workers exposure	Indoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	

Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems) Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur.(PROC4)
	Mixing operations (open systems)	Provide extract ventilation to points where emissions occur.(PROC5)
	Material transfers Bulk transfers Manual Non-dedicated facility	Provide extract ventilation to points where emissions occur.(PROC8a)
	Material transfers Bulk transfers Dedicated facility	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC8b)
	Drum and small package filling Dedicated facility	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)

Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.	
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Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

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**Environment**

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Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2	See section 2.1	Fresh water	PEC	0,057mg/L	0,105
ERC2	See section 2.1	Marine water	PEC	0,0056mg/L	0,029
ERC2	See section 2.1	Fresh water sediment	PEC	0,102mg/kg	0,105
ERC2	See section 2.1	Marine sediment	PEC	0,010mg/kg	0,029
ERC2	See section 2.1	Soil	PEC	0,058mg/kg	0,11
ERC2	See section 2.1	Sewage treatment plant (STP)	PEC	0,517mg/L	0,020
ERC2	See section 2.2	Fresh water	PEC	0,0050mg/L	0,00919
ERC2	See section 2.2	Marine water	PEC	0,004mg/L	0,00206
ERC2	See section 2.2	Fresh water sediment	PEC	0,0089mg/kg	0,00919
ERC2	See section 2.2	Marine sediment	PEC	0,0007mg/kg	0,00206
ERC2	See section 2.2	Soil	PEC	0,0013mg/kg	0,00251
ERC2	See section 2.2	Sewage treatment plant (STP)	PEC	0,0011mg/L	0,00004
ERC2	See section 2.3	Fresh water	PEC	0,259mg/L	0,480
ERC2	See section 2.3	Marine water	PEC	0,029mg/L	0,133
ERC2	See section 2.3	Fresh water sediment	PEC	0,467mg/kg	0,480
ERC2	See section 2.3	Marine sediment	PEC	0,047mg/kg	0,133
ERC2	See section 2.3	Soil	PEC	0,283mg/kg	0,550
ERC2	See section 2.3	Sewage treatment plant (STP)	PEC	2,54mg/L	0,098
ERC2	See section 2.4	Fresh water	PEC	0,0049mg/L	0,00899
ERC2	See section 2.4	Marine water	PEC	0,0004mg/L	0,00201
ERC2	See section 2.4	Fresh water sediment	PEC	0,0087mg/kg	0,00899
ERC2	See section 2.4	Marine sediment	PEC	0,0007mg/kg	0,00201
ERC2	See section 2.4	Soil	PEC	0,0004mg/kg	0,00733
ERC2	See section 2.4	Sewage treatment plant (STP)	PEC	0mg/L	0

**Workers**

Use of ECETOC TRA Version 2 with modifications.

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Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC3	---	worker inhalation, long term - systemic	10ppm	0,10
PROC3	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001
PROC4	---	worker inhalation, long term - systemic	10ppm	0,10
PROC4	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC5	---	worker inhalation, long term - systemic	25ppm	0,25
PROC5	---	Worker - dermal, long-term - systemic	2,74mg/kg/day	0,0006
PROC8a	---	worker inhalation, long term - systemic	25ppm	0,3
PROC8a	---	Worker - dermal, long-term - systemic	2,74mg/kg/day	0,0006
PROC8b	---	worker inhalation, long term - systemic	4,5ppm	0,05
PROC8b	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC9	---	worker inhalation, long term - systemic	20ppm	0,2
PROC9	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC15	---	worker inhalation, long term - systemic	50ppm	0,5
PROC15	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For scaling see: <http://www.ecetoc.org/tra>

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES



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**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 4: Uses in coatings**

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

**2.1 Contributing scenario controlling environmental exposure for: ERC4**

Relevant for aerosol

Amount used	Regional use tonnage (tons/year):	1120 ton(s)/year
	Fraction of Regional tonnage used locally:	0,893
	Maximum daily site tonnage (kg/day):	10720 kg
	Annual site tonnage (tons/year):	1072 ton(s)/year
Frequency and duration of use	Continuous exposure	100 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,95
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling environmental exposure for: ERC4**

Relevant for Adhesives

Amount used	Regional use tonnage (tons/year):	2070 ton(s)/year
	Fraction of Regional tonnage used locally:	0,08
	Maximum daily site tonnage (kg/day):	6900 kg
	Annual site tonnage (tons/year):	2070 ton(s)/year

Frequency and duration of use	Continuous exposure	300 days/year
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Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	6,27 ·10 <sup>-3</sup>
	Emission or Release Factor: Water	0
	Emission or Release Factor: Soil	0
	Indoor	

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	

Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
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Flow rate of sewage treatment plant effluent	2.000 m3/d
Degradation efficiency	93,5 %

**2.3 Contributing scenario controlling worker exposure for: PROC7, PROC10**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Spraying	Carry out in a vented booth provided with laminar airflow.(PROC7)
	Rolling, Brushing	Provide extract ventilation to points where emissions occur.(PROC10)
Organisational measures to prevent /limit releases, dispersion and exposure	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.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	See section 2.1	Fresh water	PEC	0,0049mg/L	0,00919
ERC4	See section 2.1	Marine water	PEC	0,0004mg/L	0,00206
ERC4	See section 2.1	Fresh water sediment	PEC	0,0089mg/kg	0,00919
ERC4	See section 2.1	Marine sediment	PEC	0,0007mg/kg	0,00206
ERC4	See section 2.1	Soil	PEC	0,045mg/kg	0,087
ERC4	See section 2.1	Sewage treatment plant (STP)	PEC	0,0011mg/L	0,00004
ERC4	See section 2.2	Fresh water	PEC	0,0049mg/L	0,00898
ERC4	See section 2.2	Marine water	PEC	0,0004mg/L	0,00201
ERC4	See section 2.2	Fresh water	PEC	0,0087mg/kg	0,00898

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		sediment			
ERC4	See section 2.2	Marine sediment	PEC	0,0007mg/kg	0,00201
ERC4	See section 2.2	Soil	PEC	0,0021mg/kg	0,00398
ERC4	See section 2.2	Sewage treatment plant (STP)	PEC	0mg/L	0

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC7	---	worker inhalation, long term - systemic	25ppm	0,25
PROC7	---	Worker - dermal, long-term - systemic	8,57mg/kg/day	0,002
PROC10	---	worker inhalation, long term - systemic	25ppm	0,25
PROC10	---	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 5: Uses in coatings**

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

**2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Relevant for aerosol

Amount used	Regional use tonnage (tons/year):	1120 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	6,14 kg
	Annual site tonnage (tons/year):	2,24 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related	Type of Sewage	Domestic sewage treatment plant

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to sewage treatment plant	Treatment Plant	
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Relevant for Adhesives

Amount used	Regional use tonnage (tons/year):	2070 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	11,3 kg
	Annual site tonnage (tons/year):	4,14 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d

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Degradation efficiency	93,5 %
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**2.3 Contributing scenario controlling worker exposure for: PROC10, PROC11**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	1 hours/day(PROC10)
	Frequency of use	4 hours/day(PROC11)
Other operational conditions affecting workers exposure	Indoor/Outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Rolling, Brushing	Provide extract ventilation to points where emissions occur.(PROC10)
	Spraying	Provide extract ventilation to points where emissions occur.(PROC11)
Organisational measures to prevent /limit releases, dispersion and exposure	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	Spraying	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	Wear suitable gloves tested to EN374. Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d	See section 2.1	Fresh water	PEC	0,012mg/L	0,022
ERC8a, ERC8d	See section 2.1	Marine water	PEC	0,0012mg/L	0,00593
ERC8a, ERC8d	See section 2.1	Fresh water sediment	PEC	0,022mg/kg	0,022
ERC8a, ERC8d	See section 2.1	Marine sediment	PEC	0,0020mg/kg	0,00593
ERC8a, ERC8d	See section 2.1	Soil	PEC	0,0084mg/kg	0,016
ERC8a, ERC8d	See section 2.1	Sewage treatment plant (STP)	PEC	0,076mg/L	0,00293
ERC8a, ERC8d	See section 2.2	Fresh water	PEC	0,019mg/L	0,035
ERC8a, ERC8d	See section 2.2	Marine water	PEC	0,0019mg/L	0,00954
ERC8a, ERC8d	See section 2.2	Fresh water	PEC	0,035mg/kg	0,035



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		sediment			
ERC8a, ERC8d	See section 2.2	Marine sediment	PEC	0,0033mg/kg	0,00954
ERC8a, ERC8d	See section 2.2	Soil	PEC	0,016mg/kg	0,00563
ERC8a, ERC8d	See section 2.2	Sewage treatment plant (STP)	PEC	0,146mg/L	0,00564

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	Indoor use.	worker inhalation, long term - systemic	50ppm	0,5
PROC10	Indoor use.	Worker - dermal, long-term - systemic	2,74mg/kg/day	0,001
PROC10	Outdoor use.	worker inhalation, long term - systemic	35ppm	0,4
PROC10	Outdoor use.	Worker - dermal, long-term - systemic	2,74mg/kg/day	0,001
PROC11	Indoor use.	worker inhalation, long term - systemic	60ppm	0,6
PROC11	Indoor use.	Worker - dermal, long-term - systemic	10,71 mg/kg/day	0,002
PROC11	Outdoor use.	worker inhalation, long term - systemic	35ppm	0,4
PROC11	Outdoor use.	Worker - dermal, long-term - systemic	10,71 mg/kg/day	0,002

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. For scaling see: <http://www.ecetoc.org/tra> Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 6: 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: Manufacture of textiles, leather, fur SU7: Printing and reproduction of recorded media SU12: Manufacture of plastics products, including compounding and conversion SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
Chemical product category	PC35: Washing and cleaning products (including solvent based products)
Process categories	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
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC7: Industrial use of substances in closed systems

**2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC7**

Metal degreasers

Amount used	Regional use tonnage (tons/year):	1180 ton(s)/year
	Fraction of Regional tonnage used locally:	0,046
	Maximum daily site tonnage (kg/day):	59000 kg
	Annual site tonnage (tons/year):	1180 ton(s)/year
Frequency and duration of use	Continuous exposure	20 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,3
	Emission or Release Factor: Water	1 .10-4
	Emission or Release	0

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	Factor: Soil	
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling environmental exposure for: ERC4, ERC7**

Paint strippers

Amount used	Regional use tonnage (tons/year):	2810 ton(s)/year
	Fraction of Regional tonnage used locally:	0,11
	Maximum daily site tonnage (kg/day):	140500 kg
	Annual site tonnage (tons/year):	2810 ton(s)/year
Frequency and duration of use	Continuous exposure	20 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,3
	Emission or Release Factor: Water	1 .10-4
	Emission or Release Factor: Soil	0
	Indoor Outdoor.	
Technical conditions and	Air	No air emission controls required; required removal

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measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.3 Contributing scenario controlling environmental exposure for: ERC4, ERC7**

Relevant for Cleaning agent, Relevant for Functional Fluids

Amount used	Regional use tonnage (tons/year):	257 ton(s)/year
	Fraction of Regional tonnage used locally:	0,04
	Maximum daily site tonnage (kg/day):	500 kg
	Annual site tonnage (tons/year):	10 ton(s)/year
Frequency and duration of use	Continuous exposure	100 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,01
	Emission or Release Factor: Water	1 .10-3
	Emission or Release Factor: Soil	1 .10-3
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater

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discharges, air emissions and releases to soil  
Organizational measures to prevent/limit release from the site

Soil	No soil emission controls required, Required removal efficiency is 0%
Common practices vary across sites thus conservative process release estimates used.	

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant	Domestic sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d
Degradation efficiency	93,5 %

**2.4 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC7, PROC10, PROC13**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Application of cleaning products in closed systems Vapour degreasing bath	Handle substance within a closed system.(PROC2)
	Application of cleaning products in closed systems Use in contained systems Drum/batch transfers	Handle substance within a predominantly closed system provided with extract ventilation.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur.(PROC4)
	Manual Surfaces cleaning No spraying	Provide extract ventilation to points where emissions occur.(PROC10)
	Manual Surfaces cleaning Dipping, immersion and pouring	Provide extract ventilation to points where emissions occur. or Avoid carrying out operation for more than 1 hour.(PROC13)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.	

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Conditions and measures related to personal protection, hygiene and health evaluation	Spraying	Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)
	Wear suitable gloves tested to EN374. Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4, ERC7	See section 2.1	Fresh water	PEC	0,0064mg/L	0,012
ERC4, ERC7	See section 2.1	Marine water	PEC	0,0005mg/L	0,0028
ERC4, ERC7	See section 2.1	Fresh water sediment	PEC	0,012mg/kg	0,012
ERC4, ERC7	See section 2.1	Marine sediment	PEC	0,0010mg/kg	0,0028
ERC4, ERC7	See section 2.1	Soil	PEC	0,0028mg/kg	0,00546
ERC4, ERC7	See section 2.1	Sewage treatment plant (STP)	PEC	0,016mg/L	0,000618
ERC4, ERC7	See section 2.2	Fresh water	PEC	0,0064mg/L	0,012
ERC4, ERC7	See section 2.2	Marine water	PEC	0,0006mg/L	0,00291
ERC4, ERC7	See section 2.2	Fresh water sediment	PEC	0,012mg/kg	0,012
ERC4, ERC7	See section 2.2	Marine sediment	PEC	0,0010mg/kg	0,00291
ERC4, ERC7	See section 2.2	Soil	PEC	0,0029mg/kg	0,00553
ERC4, ERC7	See section 2.2	Sewage treatment plant (STP)	PEC	0,016mg/L	0,00062
ERC4, ERC7	See section 2.3	Fresh water	PEC	0,0065mg/L	0,012
ERC4, ERC7	See section 2.3	Marine water	PEC	0,0006mg/L	0,00287
ERC4, ERC7	See section 2.3	Fresh water sediment	PEC	0,0121mg/kg	0,012
ERC4, ERC7	See section 2.3	Marine sediment	PEC	0,0010mg/kg	0,00287
ERC4, ERC7	See section 2.3	Soil	PEC	0,0019mg/kg	0,00361
ERC4, ERC7	See section 2.3	Sewage treatment plant (STP)	PEC	0,017mg/L	0,00066

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2	---	worker inhalation, long	50ppm	0,50

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		term - systemic		
PROC2	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,00006
PROC3	---	worker inhalation, long term - systemic	10ppm	0,10
PROC3	---	Worker - dermal, long-term - systemic	0,34mg/kg/day	0,00001
PROC4	---	worker inhalation, long term - systemic	10ppm	0,10
PROC4	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC7	---	worker inhalation, long term - systemic	50ppm	0,5
PROC7	---	Worker - dermal, long-term - systemic	42,86mg/kg/day	0,002
PROC10	---	worker inhalation, long term - systemic	25ppm	0,3
PROC10	---	Worker - dermal, long-term - systemic	27,43mg/kg/day	0,001
PROC13	---	worker inhalation, long term - systemic	25ppm	0,3
PROC13	---	Worker - dermal, long-term - systemic	13,71mg/kg/day	0,0006

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 7: Use in Cleaning Agents**

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category	PC35: Washing and cleaning products (including solvent based products)
Process categories	PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

**2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Metal degreasers

Amount used	Regional use tonnage (tons/year):	1180 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	6,47 kg
	Annual site tonnage (tons/year):	2,36 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	



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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Paint strippers

Amount used	Regional use tonnage (tons/year):	2810 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	15,4 kg
	Annual site tonnage (tons/year):	5,62 ton(s)/year

Frequency and duration of use	Continuous exposure	365 days/year
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Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor Outdoor.	

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	

Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
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Flow rate of sewage treatment plant effluent	2.000 m3/d
Degradation efficiency	93,5 %

**2.3 Contributing scenario controlling worker exposure for: PROC10**

Relevant for Cleaning agent

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor/Outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Organisational measures to prevent /limit releases, dispersion and exposure	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	Equipment cleaning and maintenance Manual Rolling, Brushing	Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
	Wear suitable gloves tested to EN374. Wash off any skin contamination immediately.	

**2.4 Contributing scenario controlling worker exposure for: PROC10, PROC11**

Paint strippers/graffiti remover

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor/Outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Organisational measures to prevent /limit releases, dispersion and exposure	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	cleaning Large surfaces	Wear a full face respirator conforming to EN140 with Type A filter or better.(PROC10, PROC11)

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and health evaluation

Rolling, Brushing  
Cleaning with high  
pressure washers  
Spraying

Wear suitable gloves tested to EN374.  
Wash off any skin contamination immediately.

**2.5 Contributing scenario controlling worker exposure for: PROC11**

Degreasing products

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor/Outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Organisational measures to prevent /limit releases, dispersion and exposure	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	cleaning Cleaning with high pressure washers Spraying	Wear a full face respirator conforming to EN140 with Type A filter or better.(PROC11)
	Wear suitable gloves tested to EN374. Wash off any skin contamination immediately.	

**2.6 Contributing scenario controlling worker exposure for: PROC13**

Paint strippers

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	cleaning Manual Dipping, immersion and	Provide extract ventilation to points where emissions occur.(PROC13)

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	pouring	
Organisational measures to prevent /limit releases, dispersion and exposure	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	cleaning Manual Dipping, immersion and pouring	Wear a respirator conforming to EN140 with Type A filter or better.(PROC13)
	Wear suitable gloves tested to EN374. Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d	See section 2.1	Fresh water	PEC	0,0064mg/L	0,012
ERC8a, ERC8d	See section 2.1	Marine water	PEC	0,0005mg/L	0,0028
ERC8a, ERC8d	See section 2.1	Fresh water sediment	PEC	0,012mg/kg	0,012
ERC8a, ERC8d	See section 2.1	Marine sediment	PEC	0,0010mg/kg	0,0028
ERC8a, ERC8d	See section 2.1	Soil	PEC	0,0028mg/kg	0,00546
ERC8a, ERC8d	See section 2.1	Sewage treatment plant (STP)	PEC	0,016mg/L	0,000618
ERC8a, ERC8d	See section 2.2	Fresh water	PEC	0,0064mg/L	0,012
ERC8a, ERC8d	See section 2.2	Marine water	PEC	0,0006mg/L	0,00291
ERC8a, ERC8d	See section 2.2	Fresh water sediment	PEC	0,012mg/kg	0,012
ERC8a, ERC8d	See section 2.2	Marine sediment	PEC	0,0010mg/kg	0,00291
ERC8a, ERC8d	See section 2.2	Soil	PEC	0,0029mg/kg	0,00553
ERC8a, ERC8d	See section 2.2	Sewage treatment plant (STP)	PEC	0,016mg/L	0,000618

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	See section 2.3, Indoor use.	worker inhalation, long term - systemic	30ppm	0,3
PROC10	See section 2.3, Indoor use.	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,001

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PROC10	See section 2.3, Outdoor use.	worker inhalation, long term - systemic	21ppm	0,2
PROC10	See section 2.3, Outdoor use.	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,001
PROC10	See section 2.4, Indoor use.	worker inhalation, long term - systemic	50ppm	0,5
PROC10	See section 2.4, Indoor use.	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,001
PROC10	See section 2.4, Outdoor use.	worker inhalation, long term - systemic	35ppm	0,4
PROC10	See section 2.4, Outdoor use.	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,001
PROC11	See section 2.4, Indoor use.	worker inhalation, long term - systemic	50ppm	0,5
PROC11	See section 2.4, Indoor use.	Worker - dermal, long-term - systemic	21,43mg/kg/day	0,005
PROC11	See section 2.4, Outdoor use.	worker inhalation, long term - systemic	35ppm	0,4
PROC11	See section 2.4, Outdoor use.	Worker - dermal, long-term - systemic	21,43mg/kg/day	0,005
PROC11	See section 2.5, Indoor use.	worker inhalation, long term - systemic	50ppm	0,5
PROC11	See section 2.5, Indoor use.	Worker - dermal, long-term - systemic	21,43mg/kg/day	0,005
PROC11	See section 2.5, Outdoor use.	worker inhalation, long term - systemic	35ppm	0,4
PROC11	See section 2.5, Outdoor use.	Worker - dermal, long-term - systemic	21,43mg/kg/day	0,005
PROC13	See section 2.6	worker inhalation, long term - systemic	25ppm	0,3
PROC13	See section 2.6	Worker - dermal, long-term - systemic	2,74mg/kg/day	0,001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

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**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 8: Use in agrochemicals**

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category	PC8: Biocidal products PC27: Plant protection products
Process categories	PROC11: Non industrial spraying
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

**2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Relevant for aerosol

Amount used	Regional use tonnage (tons/year):	1120 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	6,14 kg
	Annual site tonnage (tons/year):	2,24 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling worker exposure for: PROC11**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	4 hours/day
Other operational conditions affecting workers exposure	Indoor/Outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Spraying/fogging by machine application	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.(PROC11)
	Spraying/fogging by machine application	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.(PROC11)
Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.	
	Spraying/fogging by machine application	Segregate the activity away from other operations.(PROC11)
Conditions and measures related to personal protection, hygiene and health evaluation	Spraying/fogging by manual application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	Wear suitable gloves tested to EN374. Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d	---	Fresh water	PEC	0,012mg/L	0,022
ERC8a, ERC8d	---	Marine water	PEC	0,0012mg/L	0,00593
ERC8a, ERC8d	---	Fresh water sediment	PEC	0,022mg/kg	0,022
ERC8a, ERC8d	---	Marine sediment	PEC	0,0021mg/kg	0,00593

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ERC8a, ERC8d	---	Soil	PEC	0,0084mg/kg	0,016
ERC8a, ERC8d	---	Sewage treatment plant (STP)	PEC	0,076mg/L	0,00293

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC11	Indoor use.	worker inhalation, long term - systemic	54ppm	0,5
PROC11	Indoor use.	Worker - dermal, long-term - systemic	12,86mg/kg/day	0,003
PROC11	Outdoor use.	Worker - dermal, long-term - systemic	12,86mg/kg/day	0,003
PROC11	Outdoor use.	worker inhalation, long term - systemic	21ppm	0,2

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 9: Use as Functional Fluids**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category	PC16: Heat transfer fluids
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
Environmental Release Categories	ERC7: Industrial use of substances in closed systems

**2.1 Contributing scenario controlling environmental exposure for: ERC7**

Amount used	Regional use tonnage (tons/year):	257 ton(s)/year
	Fraction of Regional tonnage used locally:	0,04
	Maximum daily site tonnage (kg/day):	500 kg
	Annual site tonnage (tons/year):	10 ton(s)/year
Frequency and duration of use	Continuous exposure	20 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,01
	Emission or Release Factor: Water	1 .10-3
	Emission or Release Factor: Soil	1 .10-3
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor and outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems) Continuous process	Handle substance within a closed system.(PROC1)
	General exposures (closed systems) with sample collection	Handle substance within a closed system.(PROC2)
	General exposures (closed systems) Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur.(PROC4)
Organisational measures to prevent /limit releases, dispersion and exposure	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.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC7	---	Fresh water	PEC	0,0065mg/L	0,012

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ERC7	---	Marine water	PEC	0,0006mg/L	0,00287
ERC7	---	Fresh water sediment	PEC	0,0121mg/kg	0,012
ERC7	---	Marine sediment	PEC	0,0010mg/kg	0,00287
ERC7	---	Soil	PEC	0,0019mg/kg	0,00361
ERC7	---	Sewage treatment plant (STP)	PEC	0,017mg/L	0,000656

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	worker inhalation, long term - systemic	0,01ppm	0,0001
PROC1	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001
PROC2	---	worker inhalation, long term - systemic	50ppm	0,50
PROC2	---	Worker - dermal, long-term - systemic	0,27mg/kg/day	0,00006
PROC3	---	worker inhalation, long term - systemic	10ppm	0,10
PROC3	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001
PROC4	---	worker inhalation, long term - systemic	10ppm	0,10
PROC4	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For scaling see: <http://www.ecetoc.org/tra>

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 10: Use in laboratories**

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	SU24: Scientific research and development
Chemical product category	PC21: Laboratory chemicals
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems

**2.1 Contributing scenario controlling environmental exposure for: ERC8a**

Amount used	Regional use tonnage (tons/year):	257 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	704 kg
	Annual site tonnage (tons/year):	257 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,5
	Emission or Release Factor: Water	0,5
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related	Type of Sewage	Domestic sewage treatment plant

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to sewage treatment plant	Treatment Plant	
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	4 hours/day(PROC10)
	Frequency of use	8 hours/day(PROC15)
Other operational conditions affecting workers exposure	Indoor and outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	Rolling, Brushing cleaning Degreasing small objects in cleaning station	Provide extract ventilation to points where emissions occur.(PROC10)
Organisational measures to prevent /limit releases, dispersion and exposure	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.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	---	Fresh water	PEC	0,0058mg/L	0,011
ERC8a	---	Marine water	PEC	0,0005mg/L	0,00248
ERC8a	---	Fresh water sediment	PEC	0,010mg/kg	0,011
ERC8a	---	Marine sediment	PEC	0,0009mg/kg	0,00248
ERC8a	---	Soil	PEC	0,0010mg/kg	0,00199
ERC8a	---	Sewage treatment plant (STP)	PEC	0,0091mg/L	0,000353

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**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	---	worker inhalation, long term - systemic	60ppm	0,6
PROC10	---	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,0012
PROC15	---	worker inhalation, long term - systemic	50ppm	0,5
PROC15	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 11: Use as blowing agents**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC12: use of blowing agents in manufacture of foam</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

**2.1 Contributing scenario controlling environmental exposure for: ERC4**

Amount used	Regional use tonnage (tons/year):	955 ton(s)/year
	Fraction of Regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	3183 kg
	Annual site tonnage (tons/year):	955 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1 .10-3
	Emission or Release Factor: Soil	0
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required



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releases to soil Organizational measures to prevent/limit release from the site		removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	

Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC12**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa

Frequency and duration of use	Frequency of use	8 hours/day
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Other operational conditions affecting workers exposure	Indoor and outdoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	

Technical conditions and measures to control dispersion from source towards the worker	Production of foam-based objects General exposures (closed systems) Continuous process with sample collection Use in contained batch processes	Handle substance within a closed system.(PROC1, PROC2, PROC3)
	Production of foam-based objects Drum and small package filling Dedicated facility	Provide extract ventilation to points where emissions occur.(PROC9)

Organisational measures to prevent /limit releases, dispersion and exposure	Provide basic employee training to prevent /minimise exposures and to report any skin problems that may develop.	
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Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN374.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

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Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4	---	Fresh water	PEC	0,015mg/L	0,028
ERC4	---	Marine water	PEC	0,0014mg/L	0,00732
ERC4	---	Fresh water sediment	PEC	0,027mg/kg	0,028
ERC4	---	Marine sediment	PEC	0,0026mg/kg	0,00732
ERC4	---	Soil	PEC	0,048mg/kg	0,093
ERC4	---	Sewage treatment plant (STP)	PEC	0,103mg/L	0,00398

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	worker inhalation, long term - systemic	0,01ppm	0,0001
PROC1	---	Worker - dermal, long-term - systemic	0,04mg/kg/day	0,00001
PROC2	---	worker inhalation, long term - systemic	30ppm	0,30
PROC2	---	Worker - dermal, long-term - systemic	0,16mg/kg/day	0,00003
PROC3	---	worker inhalation, long term - systemic	60ppm	0,60
PROC3	---	Worker - dermal, long-term - systemic	0,04mg/kg/day	0,00001
PROC4	---	worker inhalation, long term - systemic	60ppm	0,60
PROC4	---	Worker - dermal, long-term - systemic	0,82mg/kg/day	0,0002
PROC8b	---	worker inhalation, long term - systemic	90ppm	0,90
PROC8b	---	Worker - dermal, long-term - systemic	0,82mg/kg/day	0,0002
PROC9	---	worker inhalation, long term - systemic	12ppm	0,1
PROC9	---	Worker - dermal, long-term - systemic	0,82mg/kg/day	0,0002
PROC12	---	worker inhalation, long term - systemic	60ppm	0,6

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PROC12	---	Worker - dermal, long-term - systemic	0,04mg/kg/day	0,00001
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**4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.  
 Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.  
 Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.  
 For scaling see: <http://www.ecetoc.org/tra>  
 Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 12: Use as extraction agent and/or processing aid**

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

**2.1 Contributing scenario controlling environmental exposure for: ERC4**

Process solvent		
Amount used	Regional use tonnage (tons/year):	2410 ton(s)/year
	Fraction of Regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	24100 kg
	Annual site tonnage (tons/year):	2410 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,669
	Emission or Release Factor: Water	1,54 ·10 <sup>-3</sup>
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	No air emission controls required; required removal efficiency is 0%.

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measures to reduce or limit discharges, air emissions and releases to soil  
Organizational measures to prevent/limit release from the site

Water	Prevent discharge of substance to wastewater or recover from wastewater
Soil	Soil emission controls are not applicable as there is no direct release to soil.
Common practices vary across sites thus conservative process release estimates used.	

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant	Domestic sewage treatment plant
Flow rate of sewage treatment plant effluent	2.000 m3/d
Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling environmental exposure for: ERC4**

Extraction medium - large sites

Amount used	Regional use tonnage (tons/year):	13400 ton(s)/year
	Fraction of Regional tonnage used locally:	1
	Maximum daily site tonnage (kg/day):	36712 kg
	Annual site tonnage (tons/year):	13400 ton(s)/year

Frequency and duration of use	Continuous exposure	300 days/year
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Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100

Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	7,06 .10-4
	Emission or Release Factor: Water	5,29 .10-3
	Emission or Release Factor: Soil	0
	Indoor	

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is

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releases to soil Organizational measures to prevent/limit release from the site		no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.3 Contributing scenario controlling environmental exposure for: ERC4**

Extraction medium - small sites

Amount used	Regional use tonnage (tons/year):	13400 ton(s)/year
	Fraction of Regional tonnage used locally:	0,287
	Maximum daily site tonnage (kg/day):	38460 kg
	Annual site tonnage (tons/year):	3846 ton(s)/year
Frequency and duration of use	Continuous exposure	300 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,114
	Emission or Release Factor: Water	0,095
	Emission or Release Factor: Soil	0
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.4 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC10, PROC15**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Indoor use.	
	Assumes use at not more than 20°C above ambient temperature, unless stated differently.	
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems) Continuous process with sample collection	Handle substance within a closed system.(PROC1, PROC2)
	General exposures (closed systems) Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation.(PROC3)
	Batch process	Provide extract ventilation to points where emissions occur.(PROC4)
	Laboratory activities Rolling, Brushing	Provide extract ventilation to points where emissions occur.(PROC10)
Organisational measures to prevent /limit releases, dispersion and exposure	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.	
	Wash off any skin contamination immediately.	

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
PA100092_001		54/66			EN

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ERC4	See section 2.1	Fresh water	PEC	0,082mg/L	0,153
ERC4	See section 2.1	Marine water	PEC	0,0082mg/L	0,042
ERC4	See section 2.1	Fresh water sediment	PEC	0,149mg/kg	0,153
ERC4	See section 2.1	Marine sediment	PEC	0,0149mg/kg	0,042
ERC4	See section 2.1	Soil	PEC	0,126mg/kg	0,245
ERC4	See section 2.1	Sewage treatment plant (STP)	PEC	0,776mg/L	0,030
ERC4	See section 2.2	Fresh water	PEC	0,011mg/L	0,021
ERC4	See section 2.2	Marine water	PEC	0,0010mg/L	0,00531
ERC4	See section 2.2	Fresh water sediment	PEC	0,020mg/kg	0,021
ERC4	See section 2.2	Marine sediment	PEC	0,0019mg/kg	0,00531
ERC4	See section 2.2	Soil	PEC	0,0075mg/kg	0,015
ERC4	See section 2.2	Sewage treatment plant (STP)	PEC	0,064mg/L	0,00247
ERC4	See section 2.3	Fresh water	PEC	0,185mg/L	0,343
ERC4	See section 2.3	Marine water	PEC	0,018mg/L	0,093
ERC4	See section 2.3	Fresh water sediment	PEC	0,334mg/kg	0,343
ERC4	See section 2.3	Marine sediment	PEC	0,033mg/kg	0,093
ERC4	See section 2.3	Soil	PEC	0,211mg/kg	0,411
ERC4	See section 2.3	Sewage treatment plant (STP)	PEC	1,81mg/L	0,070

**Workers**

Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	worker inhalation, long term - systemic	0,01ppm	0,0001
PROC1	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001
PROC2	---	worker inhalation, long term - systemic	50ppm	0,50
PROC2	---	Worker - dermal, long-term - systemic	0,27mg/kg/day	0,00006
PROC3	---	worker inhalation, long term - systemic	10ppm	0,10
PROC3	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001



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PROC4	---	worker inhalation, long term - systemic	10ppm	0,10
PROC4	---	Worker - dermal, long-term - systemic	1,37mg/kg/day	0,0003
PROC10	---	worker inhalation, long term - systemic	25ppm	0,25
PROC10	---	Worker - dermal, long-term - systemic	5,49mg/kg/day	0,001
PROC15	---	worker inhalation, long term - systemic	50ppm	0,5
PROC15	---	Worker - dermal, long-term - systemic	0,07mg/kg/day	0,00001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For scaling see: <http://www.ecetoc.org/tra>

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Assumes a good basic standard of occupational hygiene is implemented.

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**1. Short title of Exposure Scenario 13: Use in cosmetics**

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category	PC39: Cosmetics, personal care products
Process categories	PROC11: Non industrial spraying
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

**2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Relevant for aerosol

Amount used	Regional use tonnage (tons/year):	1120 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	6,14 kg
	Annual site tonnage (tons/year):	2,24 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor Outdoor.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	No soil emission controls required, Required removal efficiency is 0%
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling worker exposure for: PROC11**

Not applicable, professional worker exposure is covered under the cosmetics directive

**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d	---	Fresh water	PEC	0,012mg/L	0,022
ERC8a, ERC8d	---	Marine water	PEC	0,0012mg/L	0,00593
ERC8a, ERC8d	---	Fresh water sediment	PEC	0,022mg/kg	0,022
ERC8a, ERC8d	---	Marine sediment	PEC	0,0021mg/kg	0,00593
ERC8a, ERC8d	---	Soil	PEC	0,0084mg/kg	0,016
ERC8a, ERC8d	---	Sewage treatment plant (STP)	PEC	0,076mg/L	0,00293

**Workers**

No exposure assessment presented for human health

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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**1. Short title of Exposure Scenario 14: Consumer use**

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC1: Adhesives, sealants PC8: Biocidal products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC27: Plant protection products PC35: Washing and cleaning products (including solvent based products) PC39: Cosmetics, personal care products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

**2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d**

Amount used	Regional use tonnage (tons/year):	2810 ton(s)/year
	Fraction of Regional tonnage used locally:	0,002
	Maximum daily site tonnage (kg/day):	15,4 kg
	Annual site tonnage (tons/year):	5,62 ton(s)/year
Frequency and duration of use	Continuous exposure	365 days/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
	Dilution Factor (River)	10
	Dilution Factor (Coastal Areas)	100
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	1
	Emission or Release Factor: Water	1
	Emission or Release Factor: Soil	0,01
	Indoor	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	No air emission controls required; required removal efficiency is 0%.
	Water	Prevent discharge of substance to wastewater or recover from wastewater
	Soil	Soil emission controls are not applicable as there is no direct release to soil.
	Common practices vary across sites thus conservative process release estimates used.	

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Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
	Degradation efficiency	93,5 %

**2.2 Contributing scenario controlling consumer exposure for: PC1: DIY-use: Glues from tube**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	9 g
Frequency and duration of use	Frequency of use	52 days/year
	Exposure duration per event	240 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 2 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m <sup>3</sup>

**2.3 Contributing scenario controlling consumer exposure for: PC1: Sealants**

Activity	Rolling	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	10 g
Frequency and duration of use	Frequency of use	52 days/year
	Exposure duration per event	240 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 2 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m <sup>3</sup>

**2.4 Contributing scenario controlling consumer exposure for: PC1: DIY-use: Super glue**

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Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	0,5 g
Frequency and duration of use	Frequency of use	12 days/year
	Exposure duration per event	240 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 2 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m <sup>3</sup>

**2.5 Contributing scenario controlling consumer exposure for: PC1: DIY-use: wood parquet glue**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	750 g
Frequency and duration of use	Frequency of use	2 hours/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	58 m <sup>3</sup>
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using when windows closed.

**2.6 Contributing scenario controlling consumer exposure for: PC1: DIY-use: Carpet glue**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 8%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa

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Amount used	Amount used per event	1 kg
Frequency and duration of use	Frequency of use	2 hours/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	58 m <sup>3</sup>
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using when windows closed.

**2.7 Contributing scenario controlling consumer exposure for: PC1: Glue from spray**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	13,8 kg
Frequency and duration of use	Frequency of use	12 days/year
	Exposure duration per event	240 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m <sup>3</sup>
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Ensure spraying away from persons.

**2.8 Contributing scenario controlling consumer exposure for: PC1: Glue from spray (joint sealants)**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	75 g
Frequency and duration of use	Frequency of use	3 days/year
	Exposure duration per	45 min

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	event	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 2 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	10 m <sup>3</sup>
<b>2.9 Contributing scenario controlling consumer exposure for: PC1: DIY-use: Assembly sealants</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 14%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	390 g
Frequency and duration of use	Frequency of use	1 days/year
	Exposure duration per event	240 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 43 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	20 m <sup>3</sup>
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using when windows closed.
<b>2.10 Contributing scenario controlling consumer exposure for: PC9a: Aerosol spray can</b>		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa
Amount used	Amount used per event	279 g
Frequency and duration of use	Frequency of use	2 days/year
	Exposure duration per event	19,8 min
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
Other given operational conditions affecting consumers exposure	Room size	34 m <sup>3</sup>
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Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures	Ensure spraying away from persons.
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**2.11 Contributing scenario controlling consumer exposure for: PC27**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa

Amount used	Amount used per event	14,85 g
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Frequency and duration of use	Frequency of use	90 days/year
	Exposure duration per event	240 min

Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm <sup>2</sup>
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Other given operational conditions affecting consumers exposure	Room size	58 m <sup>3</sup>
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Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures	Ensure spraying away from persons.
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**2.12 Contributing scenario controlling consumer exposure for: PC35**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 100 hPa

Amount used	Amount used per event	27 g
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Frequency and duration of use	Frequency of use	128 days/year
	Frequency of use	1 Times per day
	Exposure duration per event	60 min

Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 215 cm <sup>2</sup>
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Other given operational conditions affecting consumers exposure	Room size	15 m <sup>3</sup>
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**3. Exposure estimation and reference to its source**

**Environment**

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d	---	Fresh water	PEC	0,0064mg/L	0,012
ERC8a, ERC8d	---	Marine water	PEC	0,0005mg/L	0,0028
ERC8a, ERC8d	---	Fresh water sediment	PEC	0,012mg/kg	0,012
ERC8a, ERC8d	---	Marine sediment	PEC	0,0010mg/kg	0,0028
ERC8a, ERC8d	---	Soil	PEC	0,0028mg/kg	0,00546
ERC8a, ERC8d	---	Sewage treatment plant (STP)	PEC	0,016mg/L	0,00062

**Consumers**

ConsExpo 4.1

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC1	See section 2.2	consumer inhalation, long term - systemic	---	0,29
PC1	See section 2.2	consumer dermal, long term - systemic	---	0,0006
PC1	See section 2.3	consumer inhalation, long term - systemic	---	0,33
PC1	See section 2.3	consumer dermal, long term - systemic	---	0,0006
PC1	See section 2.4	consumer inhalation, long term - systemic	---	0,017
PC1	See section 2.4	consumer dermal, long term - systemic	---	0,0002
PC1	See section 2.5	consumer inhalation, long term - systemic	---	0,60
PC1	See section 2.5	consumer dermal, long term - systemic	---	0,0007
PC1	See section 2.6	consumer inhalation, long term - systemic	---	0,21
PC1	See section 2.6	consumer dermal, long term - systemic	---	0,0012
PC1	See section 2.7	consumer inhalation, long term - systemic	---	0,001

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Revision Date 25.02.2013

PC1	See section 2.7	consumer dermal, long term - systemic	---	0,0004
PC1	See section 2.8	consumer inhalation, long term - systemic	---	0,11
PC1	See section 2.8	consumer dermal, long term - systemic	---	0,0021
PC1	See section 2.9	consumer inhalation, long term - systemic	---	0,64
PC1	See section 2.9	consumer dermal, long term - systemic	---	0,0005
PC9a	See section 2.10	consumer inhalation, long term - systemic	---	0,012
PC9a	See section 2.10	consumer dermal, long term - systemic	---	0,0019
PC27	See section 2.11	consumer inhalation, long term - systemic	---	0,0005
PC27	See section 2.11	consumer dermal, long term - systemic	---	0,0001
PC35	See section 2.12	consumer inhalation, long term - systemic	---	0,02
PC35	See section 2.12	consumer dermal, long term - systemic	---	0,0001

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For scaling see: <http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp>

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

<b>COMPANY INFORMATION DISTRIBUTOR</b>		
<b>name</b>	<b>BRENNTAG N.V.</b>	<b>BRENNTAG Nederland B.V.</b>
address	Nijverheidslaan 38 8540 Deerlijk	Donker Duyvisweg 44 3316 BM Dordrecht
country	Belgium	The Netherlands
phone number	+32 (0)56 77 69 44	+31 (0)78 65 44 944
fax number	+32 (0)56 77 57 11	+31 (0)78 65 44 919
website	www.brenntag.be	www.brenntag.nl
e-mail	info@brenntag.be	info@brenntag.nl
activities	Distribution and export of chemicals and raw materials	
VAT number	BE0405317567	NL001375945B01
recall procedure available	Yes	
emergency number (24/365)	+32 (0)56 77 69 44	+31 (0)78 6544 944
<b>QUALITY SYSTEMS</b>		
ISO 9001	Yes	Yes
ISO 14001	Yes	Yes
ISO 22000	Yes	Yes
FSSC 22000	Yes	Yes
GMP+ -feed	Yes	Yes
OHSAS18001	-	Yes
ESAD	Yes	Yes
other	-	AEO