UNIPLAST cod.57021002

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

1.1. Product identifier.

57021002 Code: **UNIPLAST** Product name.

Chemical name and synonym. **POLYURETHANE ADHESIVE**

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

Intended use POLYURETHANE ADHESIVE

Uses advised against

This product is not recommended for all those industrial, professional or consumer uses not specifically identified on the label.

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

SARATOGA INT. SFORZA SPA Name.

Full address. Via Edison 76

District and Country. 20090 Trezzano s/Naviglio (MI)

ITALIA

Tel. 0039-02 445731 Fax. 0039-02 4452742

e-mail address of the competent person.

responsible for the Safety Data Sheet. trading@saratogasforza.com Product distribution by: SARATOGA INT. SFORZA SPA

1.4. Emergency telephone number.

For urgent inquiries refer to. CAV - Ospedale Pediatrico "Bambino Gesù" - Roma - Tel. +39 06 68593726 (h24)

CAV - Azienda Ospedaliero-Universitaria Foggia - Foggia - Tel. +39 0881 732326 (h24)

CAV - Azienda Ospedaliera "A. Cardarelli" - Napoli - Tel. +39 081 7472870 (h24)

CAV - Policlinico "Umberto I" - Roma - Tel. +39 06 4450618 (h24) CAV - Policlinico "A. Gemelli" - Roma - Tel. +39 06 3054343 (h24)

CAV - Az. Osp. "Careggi" U.O. Tossicol. Medica - Firenze - Tel. +39 055 7947819(h24)

CAV - Centro Naz. di Informazione Tossicologica - Pavia - Tel. +39 0382 24444 (h24) CAV - Ospedale "Niguarda Ca' Granda" - Milano - Tel. +39 02 66101029 (h24)

CAV - Azienda Osp. "Papa Giovanni XXIII" - Bergamo - Tel. +39 800 883300 (h24)

SECTION 2. Hazards identification.

2.1. Classification of the substance or mixture.

The product is classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of EC Regulation 1907/2006 and subsequent amendments. Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Flammable liquid, category 2 H225 Highly flammable liquid and vapour. Eye irritation, category 2 H319 Causes serious eye irritation.

Specific target organ toxicity - single exposure, category 3 H336 May cause drowsiness or dizziness.

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2.2. Label elements.

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:





Signal words: Danger

Hazard statements:

H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements:

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources — No smoking.

P233 Keep container tightly closed. P261 Avoid breathing vapours.

P264 Wash hands thoroughly after handling. P271 Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection. P280

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+p351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue

Call a POISON CENTER or doctor/physician if you feel unwell. P312

P337+P313 If eye irritation persists: Get medical advice/attention.

P501 Dispose of contents/container to authorized collection centers.

Contains:

ACETONE

ETHYL ACETATE

METHYL ETHYL KETONE

2.3. Other hazards.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

SECTION 3. Composition/information on ingredients.

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3.2. Mixtures.

Contains:

The full wording of hazard (H) phrases is given in section 16 of the sheet.

Identification.

Classification 1272/2008 (CLP).

ETHYL ACETATE

CAS. 141-78-6

 $10 \le x < 20$

Flam. Liq. 2 H225, Eye Irrit.

2 H319, STOT SE 3 H336,

EUH066

EC. 205-500-4

INDEX. 607-022-00-5

Reg. no. 01-2119475103-46

ACETONE

CAS. 67-64-1

 $30 \le x < 60$

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

EUH066

EC. 200-662-2

INDEX. 606-001-00-8

Reg. no. 01-2119471330-49

METILETILCHETONE

CAS. 78-93-3

5 ≤ x < 10

Flam. Liq. 2 H225, Eye Irrit.

2 H319, STOT SE 3 H336,

EUH066

EC. 201-159-0 INDEX. 606-002-00-3 Reg. no. 01-2119457290-43

SECTION 4. First aid measures.

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4.1. Description of first aid measures.

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown. For symptoms and effects caused by the contained substances, see chap. 11.

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

Information not available.

SECTION 5. Firefighting measures.

5.1. Extinguishing media.

SUITABLE EXTINGUISHING EQUIPMENT

Extinguishing substances are: carbon dioxide, foam, chemical powder. For product loss or leakage that has not caught fire, water spray can be used to disperse flammable vapours and protect those trying to stem the leak.

UNSUITABLE EXTINGUISHING EQUIPMENT

Do not use jets of water. Water is not effective for putting out fires but can be used to cool containers exposed to flames to prevent explosions.

5.2. Special hazards arising from the substance or mixture.

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Excess pressure may form in containers exposed to fire at a risk of explosion. Do not breathe combustion products.

5.3. Advice for firefighters.

GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures.

6.1. Personal precautions, protective equipment and emergency procedures.

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Block the leakage if there is no hazard.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

Send away individuals who are not suitably equipped. Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site.

6.2. Environmental precautions.

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up.

Collect the leaked product into a suitable container. If the product is flammable, use explosion-proof equipment. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections.

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage.

7.1. Precautions for safe handling.

Keep away from heat, sparks and naked flames; do not smoke or use matches or lighters. Vapours may catch fire and an explosion may occur; vapour accumulation is therefore to be avoided by leaving windows and doors open and ensuring good cross ventilation. Without adequate ventilation, vapours may accumulate at ground level and, if ignited, catch fire even at a distance, with the danger of backfire. Avoid bunching of electrostatic charges. When performing transfer operations involving large containers, connect to an earthing system and wear antistatic footwear. Vigorous stirring and flow through the tubes and equipment may cause the formation and accumulation of electrostatic charges. In order to avoid the risk of fires and explosions, never use compressed air when handling. Open containers with caution as they may be pressurised. Do not eat, drink or smoke during use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities.

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Store in a well ventilated place, keep far away from sources of heat, naked flames and sparks and other sources of ignition. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s).

See attached scenarios.

SECTION 8. Exposure controls/personal protection.

8.1. Control parameters.

Regulatory References:

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CZE	Česká Republika	Nařízení vlády č. 361/2007 Sb. kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	MAK-und BAT-Werte-Liste 2012
ESP	España	INSHT - Límites de exposición profesional para agentes químicos en España 2015
FRA	France	JORF n°0109 du 10 mai 2012 page 8773 texte n° 102
GBR	United Kingdom	EH40/2005 Workplace exposure limits
HRV	Hrvatska	NN13/09 - Ministarstvo gospodarstva, rada i poduzetništva
HUN	Magyarország	50/2011. (XII. 22.) NGM rendelet a munkahelyek kémiai biztonságáról
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
POL	Polska	ROZPORZĄDZENIE MINISTRA PRACY I POLITYKI SPOŁECZNEJ z dnia 16 grudnia 2011r
EU	OEL EU	Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC.
	TLV-ACGIH	ACGIH 2016

l	ETHYL ACETATE					
ı	Threshold Limit Value.					
ı	Туре	Country	TWA/8h		STEL/15min	
١			mg/m3	ppm	mg/m3	ppm
ľ	TLV	CZE	700		900	
	AGW	DEU	1500	400	3000	800
	MAK	DEU	1500	400	3000	800
	VLA	ESP	1460	400		
	VLEP	FRA	1400	400		
	WEL	GBR		200		400
	GVI	HRV		200		400

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AK	HUN	1400		1400				
NDS	POL	200		600				
TLV-ACGIH		1441	400					
Predicted no-effect concentration	- PNEC.							
Normal value in fresh water Normal value in marine water Normal value for fresh water sediment Normal value for marine water sediment Normal value of STP microorganisms Normal value for the food chain (secondary poisoning) Normal value for the terrestrial compartment				0,24 0,02 1,15 0,115 650 0,2 0,148		mg/l mg/l mg/kg mg/l g/kg mg/kg	/d	
Health - Derived no-effect level - DNEL / DMEL Effects on			,	Effects on				
Route of exposure	consumers. Acute local	Acute systemic	Chronic local	Chronic systemic	workers Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.				4,5 mg/kg		Зузіснію		Systemic
Inhalation. Skin.	734 mg/m3	734 mg/m3	367 mg/m3	bw/d 367 mg/m3 37 mg/kg bw/d	1468 mg/m3	1468 mg/m3	734 mg/m3	734 mg/kg 63 mg/kg bw/d
ACETONE								
Threshold Limit Value. Type	Country	TWA/8h		STEL/15min				
71.	,	mg/m3	ppm	mg/m3	ppm			
TLV	CZE	800		1500				
AGW	DEU	1200	500	2400	1000			
MAK	DEU	1200	500	2400	1000			
VLA	ESP	1210	500					
VLEP	FRA	1210	500	2420	1000			
WEL	GBR	1210	500	3620	1500			
GVI	HRV	1210	500					
AK	HUN	1210		2420				
VLEP	ITA	1210	500					
NDS	POL	600		1800				
OEL	EU	1210	500					
TLV-ACGIH		1187	500	1781	750			
Predicted no-effect concentration	- PNEC.							
Normal value in fresh water Normal value in marine water Normal value for fresh water sedi Normal value for marine water se Normal value of STP microorgani Normal value for the terrestrial co Health - Derived no-effect I	diment sms mpartment	MEL		10,6 21 30,4 3,04 100 33,3		mg/l mg/l mg/kg mg/kg mg/l mg/kg	İ	
	Effects on				Effects on workers			
Route of exposure	consumers. Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral. Inhalation.				62 mg/kg		2420 ma/m²		1210 ma/m2
Skin.				200 mg/m3 62 mg/kg		2420 mg/m3		1210 mg/m3 186 mg/kg
METH ETH CHETONE								
METILETILCHETONE Threshold Limit Value.								
Туре	Country	TWA/8h		STEL/15min				
		mg/m3	ppm	mg/m3	ppm			

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TLV	CZE	600		900				
AGW	DEU	600	200	600	200	PELLE		
MAK	DEU	600	200	600	200	PELLE		
VLA	ESP	600	200	900	300			
VLEP	FRA	600	200	900	300	PELLE		
WEL	GBR	600	200	899	300	PELLE		
GVI	HRV	600	200	900	300	PELLE		
AK	HUN	600		900				
VLEP	ITA	600	200	900	300			
NDS	POL	450		900				
OEL	EU	600	200	900	300			
TLV-ACGIH		590	200	885	300			
Predicted no-effect concentr	ation - PNEC.							
Normal value in fresh water Normal value for fresh water Normal value for marine wat Normal value of STP microo Normal value for the terrestri	er sediment rganisms			55,8 284,74 284,74 709 22,5		mg/l mg/kg mg/kg mg/l mg/kg	ĺ	
Health - Derived no-effe		MEL						
	Effects on consumers.				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral.				31 mg/kg				
Inhalation.				106 mg/m3				600 mg/m3
Skin.				412 mg/kg				1161 mg/kg

Legend:

(C) = CEILING; INHAL = Inhalable Fraction; RESP = Respirable Fraction; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

TLV of solvent mixture: 1094 mg/m3.

8.2. Exposure controls.

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As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must be CE marked, showing that it complies with applicable standards.

When choosing risk management measures and operating conditions, consult the exposition scenarios attached.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION

Protect hands with category III work gloves (see standard EN 374).

The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION

Wear category II professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

Consider the appropriateness of providing antistatic clothing in the case of working environments in which there is a risk of explosion.

EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION

If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.

Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.

If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS.

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

Product residues must not be indiscriminately disposed of with waste water or by dumping in waterways.

For information on controlling environmental exposure, see the exposure scenarios attached to this safety datasheet.

SECTION 9. Physical and chemical properties.

9.1. Information on basic physical and chemical properties.

Appearance dense liquid Colour clear

Odour characteristic of solvent

Odour threshold.

pH.

Melting point / freezing point.

Initial boiling point.

Boiling range.

Flash point.

Evaporation Rate

Not available.

Not available.

Not available.

Not available.

Not available.

Flash point.

Evaporation Rate

Flammability of solids and gases

Lower inflammability limit.

Upper inflammability limit.

Lower explosive limit.

Upper explosive limit.

Vapour pressure.

-15 °C.

Not available.

2,1 % (V/V).

13 % (V/V).

Not available.

Vatavailable.

Vapour pressure.

233 mm Hg.

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Vapour density Not available.

Relative density. 0,89

Solubility soluble in organic Partition coefficient: n-octanol/water solvents Not available.

Auto-ignition temperature.

Decomposition temperature.

Viscosity

Explosive properties

Oxidising properties

A60°C

Not available.

Not available.

Not available.

9.2. Other information.

Total solids (250°C / 482°F) 23,80% VOC (Directive 2010/75/EC) : 76,20% VOC (volatile carbon) : 46,20%

SECTION 10. Stability and reactivity.

10.1. Reactivity.

There are no particular risks of reaction with other substances in normal conditions of use.

ETHYL ACETATE

Decomposes slowly into acetic acid and ethanol under the effect of light, air and water.

ACETONE

Decomposes under the effect of heat.

METILETILCHETONE

Decomposes under the effect of heat.

10.2. Chemical stability.

The product is stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions.

The vapours may also form explosive mixtures with the air.

ETHYL ACETATE

Risk of explosion on contact with: alkaline metals,hydrides,oleum.May react violently with: fluorine,strong oxidising agents,chlorosulphuric acid,potassium tert-butoxide.Forms explosive mixtures with: air.

ACETONE

Risk of explosion on contact with: bromine trifluoride,fluorine dioxide,hydrogen peroxide,nitrosyl chloride,2-methyl-1,3 butadiene,nitromethane,nitrosyl perchlorate. May react dangerously with: potassium tert-butoxide,alkaline hydroxides,bromine,bromoform,isoprene,sodium,sulphur dioxide,chromium trioxide,chromyl chloride,nitric acid,chloroform,peroxymonosulphuric acid,phosphoryl oxychloride,chromosulphuric acid,fluorine,strong oxidising agents,strong reducing agents. Develops flammable gas on contact with: nitrosyl perchlorate.

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METILETILCHETONE

Risk of explosion on contact with: bromine trifluoride,fluorine dioxide,hydrogen peroxide,nitrosyl chloride,2-methyl-1,3 butadiene,nitromethane,nitrosyl perchlorate. May react dangerously with: potassium tert-butoxide, alkaline hydroxides, bromine, bromoform, isoprene, sodium, sulphur dioxide, chromium trioxide,chromyl chloride,nitric acid,chloroform,peroxymonosulphuric acid,phosphoryl oxychloride,chromosulphuric acid,fluorine,strong oxidising agents, strong reducing agents. Develops flammable gas on contact with: nitrosyl perchlorate.

10.4. Conditions to avoid.

Avoid overheating. Avoid bunching of electrostatic charges. Avoid all sources of ignition.

ETHYL ACETATE

Avoid exposure to: light, sources of heat, naked flames.

ACETONE

Avoid exposure to: sources of heat,naked flames.

METILETILCHETONE

Avoid exposure to: sources of heat,naked flames.

10.5. Incompatible materials.

ETHYL ACETATE

Incompatible with: acids,bases,strong oxidants,aluminium,nitrates,chlorosulphuric acid.Incompatible materials: plastic materials.

ACETONE

Incompatible with: acids,oxidising substances.

METILETILCHETONE

Incompatible with: acids,oxidising substances.

10.6. Hazardous decomposition products.

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

ACFTONE

May develop: ketenes, irritant substances.

METILETILCHETONE

May develop: ketenes,irritant substances.

SECTION 11. Toxicological information.

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects.

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ACUTE TOXICITY.

LC50 (Inhalation - vapours) of the mixture: Not classified (no significant component).

LC50 (Inhalation - mists / powders) of the mixture: Not classified (no significant component).

LD50 (Oral) of the mixture: Not classified (no significant component).

LD50 (Dermal) of the mixture: Not classified (no significant component).

ACETONE

LD50 (Oral).5800 mg/kg ratto

LD50 (Dermal).> 20 coniglio

LC50 (Inhalation).21,09 ratto

METILETILCHETONE

LD50 (Oral).> 2000 mg/kg Ratto

LD50 (Dermal).> 5000 mg/kg Coniglio

LC50 (Inhalation). > 5000 Ratto

ETHYL ACETATE

LD50 (Oral).4934 ratto

LD50 (Dermal).> 20000 coniglio

SKIN CORROSION / IRRITATION.

Causes skin irritation.

SERIOUS EYE DAMAGE / IRRITATION.

Causes serious eye irritation.

RESPIRATORY OR SKIN SENSITISATION.

Does not meet the classification criteria for this hazard class.

GERM CELL MUTAGENICITY.

Does not meet the classification criteria for this hazard class.

CARCINOGENICITY.

Does not meet the classification criteria for this hazard class.

REPRODUCTIVE TOXICITY.

Does not meet the classification criteria for this hazard class.

STOT - SINGLE EXPOSURE.

May cause drowsiness or dizziness.

STOT - REPEATED EXPOSURE.

Does not meet the classification criteria for this hazard class.

ASPIRATION HAZARD.

Does not meet the classification criteria for this hazard class Viscosity: 2900 cps a 25 C°

SECTION 12. Ecological information.

This product is dangerous for the environment and highly toxic for aquatic organisms. In the long term, it have negative effects on aquatic environment.

12.1. Toxicity.

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ACETONE

LC50 - for Fish. 8120 mg/l/96h Pimephales promelas

EC50 - for Crustacea. 8800 mg/l/48h Daphnia EC50 - for Algae / Aquatic 530 mg/l/72h Alga

Plants.

METILETILCHETONE

LC50 - for Fish. 2993 mg/l/96h Pimephales promelas EC50 - for Crustacea. 308 mg/l/48h Daphnia magna

EC50 - for Algae / Aquatic 2029 mg/l/72h Scenedesmus subspicatus

Plants.

ETHYL ACETATE

LC50 - for Fish.

230 mg/l/96h Pimephales promelas
EC50 - for Crustacea.

165 mg/l/48h Daphnia magna
Chronic NOEC for

2,4 mg/l Daphnia pulex

Crustacea.

Chronic NOEC for Algae / > 100 mg/l Scenedesmus subspicatus

Aquatic Plants.

12.2. Persistence and degradability.

The paraffinic hydrocarbons fraction may be considered biodegradable in water and in air	. They distribute mostly in the air.	The small non biodegradable
amount which spreads into water tends to accumulate in fish.		

ACETONE

Rapidly biodegradable.

METILETILCHETONE

Rapidly biodegradable.

UNIPLAST

12.4. Mobility in soil.

Information not available

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ETHYL ACETATE Solubility in water. Rapidly biodegradable.	> 10000 mg/l
12.3. Bioaccumulative potential.	
ACETONE	
Partition coefficient: n-	-0,23
octanol/water. BCF.	3
ETHYL ACETATE	
Partition coefficient: n-	0,68
octanol/water. BCF.	30

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On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects.

Information not available.

SECTION 13. Disposal considerations.

13.1. Waste treatment methods.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

Waste transportation may be subject to ADR restrictions.

CONTAMINATED PACKAGING

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information.

14.1. UN number.

ADR / RID, IMDG, 1133

IATA:

14.2. UN proper shipping name.

ADR / RID: **ADHESIVES** IMDG: **ADHESIVES** (HEPTANE) IATA: **ADHESIVES**

14.3. Transport hazard class(es).

ADR / RID: Class: 3 Label: 3

IMDG: Class: 3 Label: 3

IATA: Class: 3 Label: 3



14.4. Packing group.

ADR / RID, IMDG, П

IATA:

14.5. Environmental hazards.

ADR / RID: NO

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IMDG: NO

IATA: NO

For Air transport, environmentally hazardous mark is only mandatory for UN 3077 and UN 3082.

Pass.:

14.6. Special precautions for user.

ADR / RID: HIN - Kemler: 33 Limited Tunnel

Quantities: 5 restriction code: (D/E)

Special Provision: 640C

IMDG: EMS: F-E, S-D Limited

Quantities: 5

Maximum

IATA: Cargo: Packaging

instructions: quantity: 60 L 364

Maximum Packaging

instructions: quantity: 5 L

353

Special Instructions: A3

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

Information not relevant.

SECTION 15. Regulatory information.

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

Seveso Category - Directive 2012/18/EC: P5c-E1

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006.

Product.

3 - 40 Point.

Substances in Candidate List (Art. 59 REACH).

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisarion (Annex XIV REACH).

None.

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None.

Substances subject to the Rotterdam Convention:

None.

Substances subject to the Stockholm Convention:

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None.

Healthcare controls.

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment.

A chemical safety assessment has been performed for the following contained substances.

ETHYL ACETATE

ACETONE

METILETILCHETONE

SECTION 16. Other information.

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Flam. Liq. 2 Flammable liquid, category 2

Eye Irrit. 2 Eye irritation, category 2

STOT SE 3 Specific target organ toxicity - single exposure, category 3

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals

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- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

- 1. Regulation (EU) 1907/2006 (REACH) of the European Parliament
- 2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
- 3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
- Regulation (EU) 2015/830 of the European Parliament
- 5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
- 6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament 7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
- 8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
- 9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
- 10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
- The Merck Index. 10th Edition
- Handling Chemical Safety
- INRS Fiche Toxicologique (toxicological sheet)
- Patty Industrial Hygiene and Toxicology
- N.I. Sax Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:

Scenarios added

Exposition Scenarios.

Substance. **ETHYL ACETATE**

Scenario Title. ETHYL ACETATE BRENNTAG

Revision nr.

EN Acetato di etile 1.pdf File

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Substance. **ACETONE**

ACETONE BRENNTAG Scenario Title.

Revision nr. File. EN_Acetone_1.pdf

METILETILCHETONE Substance. Scenario Title. **BUTANONE BRENNTAG**

Revision nr. File. EN_Metiletilchetone_1.pdf

Brenntag S.p.A.



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

Ethyl acetate

Version 2.0

Print Date 02.02.2017

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Distribution of substance	3	8, 9	NA	1, 2, 8a, 8b, 9, 15	2	NA	ES1393
2	Formulation & (re)packing of substances and mixtures	3	10	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 15	2	NA	ES1391
3	Use in Cleaning Agents	3	NA	NA	2, 3, 4, 7, 8a, 8b, 10, 13	4	NA	ES13890
4	Use in Cleaning Agents	22	NA	NA	2, 3, 4, 8a, 8b, 10, 11, 13	8a	NA	ES13892
5	Use as lubricants	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 17, 18	4, 7	NA	ES13894
6	Use as lubricants	22	NA	NA	1, 2, 3, 4, 8a, 8b, 9, 10, 11, 13, 17, 18, 20	8a	NA	ES13896
7	Use in laboratories	3	NA	NA	15	4	NA	ES1402
8	Use in laboratories	22	NA	NA	15	8a	NA	ES1406
9	Use as extraction agent and/or processing aid	3	9	NA	1, 2, 3, 4, 8a, 8b	1	NA	ES1395
10	Uses in coatings	22	NA	NA	1, 2, 8a, 8b, 10, 11, 13, 19	8a, 8d	NA	ES1404
11	Use in agrochemicals	22	NA	NA	2, 4, 8a, 8b, 11, 13	8a, 8c, 8d, 8f	NA	ES8752
12	Uses in coatings	21	NA	1, 9a	NA	8a	NA	ES1408
13	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 10, 13, 15, 9, 14	4	NA	ES18795



Ethyl acetate

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1. Short title of Exposure So	enario 1: Distribution of	substance				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites					
Sectors of end-use		SU8: Manufacture of bulk, large scale chemicals (including petroleum products) 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 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 pre	parations				
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC2				
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).				
	Annual site tonnage (tons/year):	30000 tonnes				
Amount used	Daily amount per site	100 tonnes				
Amount used	Fraction used at the main local source.	1				
	Annually total	30000 tonnes				
Frequency and duration of use	Continuous exposure	300 days/year				
Environment feators not	Flow rate of receiving surface water	18.000 m3/d				
Environment factors not influenced by risk management	Dilution Factor (River)	10				
	Dilution Factor (Coastal Areas)	100				
	Emission or Release Factor: Air	2 %				
Other given operational	Emission or Release Factor: Water	10 %				
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %				
	Outdoor use.					
	Processing temperature:	Ambient temperature				
	Processing pressure: Amb	pient pressure.				
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit	Air	Containment should be used to minimize releases to air., Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental				
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discharges, air emissions and		legislation
releases to soil Organizational measures to prevent/limit release from the site	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.
preventalinit release from the site	Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)
	Bund storage facilities to p Prevent environmental dis	revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d
to sewage treatment plant	Percentage removed from waste water	87 %
	Sludge Treatment	Disposal or recovery
Conditions and measures related to external treatment of waste for	Waste treatment	Hazardous waste incineration., Dispose for use in recycled fuels.
disposal	Disposal methods	Dispose of waste product or used containers according to local regulations.
2.2 Contributing scenario co PROC9, PROC15	ntrolling worker exposu	ire for: PROC1, PROC2, PROC8a, PROC8b,
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	n.a. in tier 1 TRA MODEL	
	Frequency of use	< 240 days/year
	Frequency of use	> 4 days/week
Frequency and duration of use	Exposure duration per day	> 240 min
	Exposure duration per day	60 - 240 min(PROC8a)
Human factors not influenced by risk management	Exposed skin areas	Two hands 960 cm ²
Other operational conditions	Outdoor or in highly ventila	ated (open) spaces
affecting workers exposure	Indoor use.(PROC8b, PRO	DC9)
	General exposures Continuous process	Handle substance within a closed system.(PROC1)
Technical conditions and measures to control dispersion from source towards the worker	General exposures Continuous process with sample collection	Handle substance within a closed system.(PROC2)
	Bulk transfers Non-dedicated facility	Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)



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	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide extract ventilation to material transfer points and other openings. Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)		
	Drum/batch transfers Filling / preparation of equipment from drums or containers Bulk weighing	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide extract ventilation to material transfer points and other openings.(PROC9)		
	Laboratory activities	Handle in a fume cupboard or under extract ventilation.(PROC15)		
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves (tested to EN374) and eye protection. Butyl rubber gloves offer good protection			

3. Exposure estimation and reference to its source

Environment

ERC2: EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2		Fresh water	PEC	0,179mg/L	0,688
ERC2		Marine water	PEC	0,018mg/L	0,688
ERC2		Fresh water sediment	PEC	0,239mg/kg	0,854
ERC2		Marine sediment	PEC	0,024mg/kg	0,085
ERC2		Soil	PEC	0,002mg/kg	0,009
ERC2		Sewage treatment plant (STP)	PEC	1,77mg/L	0,003
ERC2		Total daily intake via local environment	PEC	0,005mg/kg bw/day	< 0,001

Workers

PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC15: Use of ECETOC TRA Version 2 with modifications.

Specific conditions	Exposure routes	Level of Exposure	RCR
	Worker - inhalative, long- term - local	0,026mg/m ³	< 0,001
	Worker - dermal, long-	0,34mg/kg bw/day	0,0054
		Worker - inhalative, long- term - local	Worker - inhalative, long- term - local 0,026mg/m³

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	term - systemic		
PROC2	 Worker - inhalative, long- term - local	128,48mg/m³	0,18
PROC2	 Worker - dermal, long- term - systemic	1,37mg/kg bw/day	0,022
PROC8a	 Worker - inhalative, long- term - local	385,44mg/m³	0,53
PROC8a	 Worker - dermal, long- term - systemic	2,74mg/kg bw/day	0,044
PROC8b	 Worker - inhalative, long- term - local	9,91mg/m³	0,014
PROC8b	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC9	 Worker - inhalative, long- term - local	73,42mg/m³	0,1
PROC9	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC15	 Worker - inhalative, long- term	50ppm	0,25
PROC15	 Worker - dermal, long- term - systemic	0,34mg/kg bw/day	0,005

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

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated * (local emission fraction) * (local WWTP flow rate fraction) * (local structure fraction) * (local str

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.

For further information on the assessment method, 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 So		(re)packing of substances and mixtures s of substances as such or in preparations at industria		
Main User Groups	sites	s of substances as such of in preparations at industria		
Sectors of end-use	SU 10: Formulation [mixing alloys)	g] of preparations and/ or re-packaging (excluding		
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 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 prepared	parations		
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC2		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
	Annual site tonnage (tons/year):	15000 tonnes		
Amount used	Daily amount per site	50 tonnes		
Amount used	Fraction used at the main local source.	0,4		
	Annually total	60000 tonnes		
Frequency and duration of use	Continuous exposure	300 days/year		
Fundament to store and	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not influenced by risk management	Dilution Factor (River)	10		
midened by nek management	Dilution Factor (Coastal Areas)	100		
	Emission or Release Factor: Air	0,5 %		
Other given operational conditions affecting	Emission or Release Factor: Water	0,3 %		
environmental exposure	Emission or Release Factor: Soil	0,01 %		
	Indoor use.			
Technical conditions and measures at process level	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be		
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needed to comply with other environmental rechenical onside conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site			
discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Water Water Treat onsite wastewater (reatment required. Water Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %) Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent environmental discharge consistent with regulatory requirements. Type of Sewage Treatment Plant Type of Sewage Treatment Plant Flow rate of sewage treatment plant effluent Percentage removed from waste water Sludge Treatment Percentage removed from waste water Sludge Treatment Disposal or recovery Hazardous waste incineration., Dispose for use in recycled fuels, External treatment and disposal or waste should comply with applicable local and/or national regulations. Dispose of waste product or used containers according to local regulations. 2.2 Contributing scenario controlling worker exposure PROC5, PROC8a, PROC8b, PROC9, PROC15 Product characteristics Product characteristics Conditions and measures related to external treatment of waste for disposal Disposal methods Dispose of waste product or used containers according to local regulations. Covers percentage substance in the product up to 100 % (unless stated differently). Physical Form (at time of use) Vapour pressure Prequency of use Frequency of use Frequency of use Exposure duration per day Exposure duration per day Frequency of use Exposure duration per day Exposure duration per day Exposure duration per day The handle substance within a closed system.(PROC1) Technical conditions and measures to control dispersion from source towards the worker exposures Continuous process Handle substance within a closed system.(PROC1)	Technical onsite conditions and		
Organizational measures to prevent/limit release from the site water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %). Bund storage facilities to prevent soil and water pollution in the event of spillage. Prevent environmental discharge consistent with regulatory requirements. Type of Sewage Treatment Plant Flow rate of sewage treatment plant Flow rate of sewage treatment plant Flow rate of sewage from waste water Sludge Treatment Plant Flow maste water Sludge Treatment Dant Flow maste water Sludge Treatment Dant Flow maste water Sludge Treatment of waste for disposal or recovery Waste treatment Disposal or recovery Hazardous waste incineration., Dispose for use in recycled fuels., External treatment and disposal of waste should comply with applicable local and/or national regulations. Disposal methods Dispose of waste product or used containers according to local regulations. 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC69, PROC69, PROC75 Product characteristics Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure 98 hPa Amount used n.a. in tier 1 TRA MODEL Frequency and duration of use Exposure duration per day Frequency of use 240 days/year Frequency of use 240 days/year Frequency of use 240 min Exposure duration per day Liquid Exposure duration per day	discharges, air emissions and	Water	
Prevent environmental discharge consistent with regulatory requirements. Type of Sewage Treatment Plant Flow rate of sewage treatment plant Percentage removed from waste water Sludge Treatment Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external treatment of waste for disposal Disposal methods Di	Organizational measures to	Water	discharge) to provide the required removal
Conditions and measures related to sewage treatment plant Flow rate of sewage treatment Percentage removed from waste water Sludge Treatment Sludge Treatment Disposal or recovery Hazardous waste incineration., Dispose for use in recycled fuels., External treatment and disposal of waste should comply with applicable local and/or national regulations. Disposal methods Dispose of waste product or used containers according to local regulations. 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Prequency and duration of use Frequency of use Exposure duration per day risk management Other operational conditions affecting workers exposure Technical conditions and measures to control dispersion from source towards the worker General exposures Continuous process General exposures Ensure material transfers are under containment or			
Conditions and measures related to sewage treatment plant Percentage removed from waste water Sludge Treatment Disposal or recovery Hazardous waste incineration., Dispose for use in recycled fuels., External treatment and disposal of waste should comply with applicable local and/or national regulations. Disposal methods Dispose of waste product or used containers according to local regulations. Product characteristics Product characteristics Product characteristics Prequency and duration of use Frequency and duration of use Human factors not influenced by risk management Other operational conditions affecting worker exposure Technical conditions and measures to control dispersion from source towards the worker General exposures General exposures Fersument plant effluent Precentage removed process Waste treatment Disposal or recovery Hazardous waste incineration., Dispose for use in recycled fuels., External freatment and disposal of waste should comply with applicable local and/or national regulations. Dispose of waste product or used containers according to local regulations. Dispose of waste product or used containers according to local regulations. Covers percentage substance in the product up to 100 % (unless stated differently). Iquid Vapour pressure 98 hPa Amount used n.a. in tier 1 TRA MODEL Frequency of use Frequency of use 240 days/year Frequency of use 240 min(PROC8a, PROC8b) Frequency of use 240 min(PROC8a, PROC8b) Frequency of use Exposure duration per day 1 minum (PROC8a, PROC8b) Frequency of use Exposure duration per day 1 minum (PROC8a, PROC8b) Frequency of use Exposure duration per day 240 min(PROC8a, PROC8b) Frequency of use Frequen			Municipal sewage treatment plant
Percentage removed from waste water Sludge Treatment Disposal or recovery			2.000 m3/d
Conditions and measures related to external treatment of waste for disposal Disposal methods Dispose of waste product or used containers according to local regulations. Dispose of waste product or used containers according to local regulations. Dispose of waste product or used containers according to local regulations. Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Prequency and duration of use Frequency and duration of use Frequency and duration of use Frequency of use Exposure duration per day Exposure duration per day Indoor use. Other operational conditions affecting worker exposures General exposures General exposures Finsure material transfers are under containment or fensular transfers are under containment or	to sewage treatment plant		87 %
Conditions and measures related to external treatment of waste for disposal Disposal methods Dispose of waste product or used containers according to local regulations. Dispose of waste product or used containers according to local regulations. Dispose of waste product or used containers according to local regulations. Concentration of the Substance in Mixture/Article Product characteristics Provincial Form (at time of use) Vapour pressure Prequency of use Frequency of use Frequency of use Frequency of use Exposure duration per day Exposure duration per day Exposure duration per day Product characteristics Product charact		Sludge Treatment	Disposal or recovery
Disposal methods Dispose of waste product or used containers according to local regulations. 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC68, PROC69, PROC15 Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Prequency of use Ina. in tier 1 TRA MODEL Frequency of use Frequency of use Exposure duration per day Exposure duration per day Indoor use. Outdoor use.(PROC1) General exposures Ensure material transfers are under containment or	to external treatment of waste for	Waste treatment	recycled fuels., External treatment and disposal of waste should comply with applicable local and/or
Product characteristics Concentration of the Substance in Mixture/Article	disposal	Disposal methods	
Product characteristics Substance in Mixture/Article 100 % (unless stated differently).			ire for: PROC1, PROC2, PROC3, PROC4,
Amount used In.a. in tier 1 TRA MODEL Frequency of use		Substance in	
Amount used n.a. in tier 1 TRA MODEL Frequency of use	Product characteristics		liquid
Frequency of use		Vapour pressure	98 hPa
Frequency and duration of use Frequency and duration of use Exposure duration per day Exposure dura	Amount used	n.a. in tier 1 TRA MODEL	
Frequency and duration of use Exposure duration per day Exposure duration		Frequency of use	< 240 days/year
day > 240 min(PROC8a, PROC8b) Human factors not influenced by risk management Other operational conditions affecting workers exposure Technical conditions and measures to control dispersion from source towards the worker day > 240 min(PROC8a, PROC8b) Two hands 960 cm² Two hands 960 cm² Two hands 960 cm² Two hands 960 cm² Handle substance within a closed system.(PROC1) Handle substance within a closed system.(PROC1) General exposures Continuous process General exposures General exposures General exposures Finsure material transfers are under containment or		Frequency of use	> 4 days/week
Human factors not influenced by risk management Other operational conditions affecting workers exposure Technical conditions and measures to control dispersion from source towards the worker day Exposed skin areas Two hands 960 cm² Handle substance within a closed system.(PROC1)	Frequency and duration of use		> 240 min
Technical conditions and measures to control dispersion from source towards the worker operational conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions and measures to control dispersion from source towards the worker of the following conditions are control dispersion from source towards the worker of the following conditions are conditions and measures to control dispersion from the following conditions are conditions and measures to control dispersion from the following conditions are conditions and measures to control dispersion from the following conditions are conditions are conditions and measures to control dispersion from the following conditions are conditions and measures to control dispersion from the following conditions are conditions			< 240 min(PROC8a, PROC8b)
Other operational conditions affecting workers exposure Outdoor use. (PROC1) Technical conditions and measures to control dispersion from source towards the worker Outdoor use. Outdoor use. Handle substance within a closed system.(PROC1) General exposures Continuous process General exposures Ensure material transfers are under containment or		Exposed skin areas	Two hands 960 cm ²
affecting workers exposure Outdoor use.(PROC1) Technical conditions and measures to control dispersion from source towards the worker Outdoor use.(PROC1) Handle substance within a closed system.(PROC1) General exposures Continuous process General exposures Ensure material transfers are under containment or		Indooruse	
Technical conditions and measures to control dispersion from source towards the worker General exposures Continuous process General exposures General exposures General exposures Ensure material transfers are under containment or			
from source towards the worker General exposures Ensure material transfers are under containment or	Technical conditions and	General exposures	Handle substance within a closed system.(PROC1)
		General exposures	
	DA (00000 00)		_

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	with sample collection	Provide extraction ventilation at points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC2)			
	Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)			
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)			
	Drum/batch transfers Filling / preparation of equipment from drums or containers Bulk weighing	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC9)			
	General exposures Use in contained batch processes	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC3)			
	General exposures Use in contained batch processes with sample collection	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC4)			
	Mixing operations (open systems) Batch process	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC5)			
	Laboratory activities	Handle in a fume cupboard or under extract ventilation.(PROC15)			
Conditions and measures related to personal protection, hygiene and health evaluation	to personal protection, hygiene Butyl rubber gloves offer good protection				
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3. Exposure estimation and reference to its source

Environment

ERC2: EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2		Fresh water	PEC	0,144mg/L	0,554
ERC2		Marine water	PEC	0,0144mg/L	0,554
ERC2		Fresh water sediment	PEC	0,192mg/kg	0,686
ERC2		Marine sediment	PEC	0,019mg/kg	0,0685
ERC2		Soil	PEC	0,0015mg/kg	0,005
ERC2		Sewage treatment plant (STP)	PEC	1,416mg/L	0,0022
ERC2		Total daily intake via local environment	PEC	0,003mg/kg bw/day	< 0,001

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Exposure routes Level of Exposure	
PROC1		Worker - inhalative, long- term - local	0,03mg/m³	< 0,001
PROC1		Worker - dermal, long- term - systemic	0,34mg/kg bw/day	0,0054
PROC2		Worker - inhalative, long- term - local	18,35mg/m³	0,025
PROC2		Worker - dermal, long- term - systemic	0,14mg/kg bw/day	0,0022
PROC3		Worker - inhalative, long- term - local	73,42mg/m³	0,10
PROC3		Worker - dermal, long- term - systemic	0,03mg/kg bw/day	< 0,001
PROC4		Worker - inhalative, long- term - local	73,42mg/m³	0,25
PROC4		Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC5		Worker - inhalative, long- term - local	183,54mg/m ³	0,301
PROC5		Worker - dermal, long- term - systemic	0,07mg/kg bw/day	0,0011
PROC8a		Worker - inhalative, long-	55,06mg/m ³	0,075



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	term - local		
PROC8a	 Worker - dermal, long- term - systemic	0,14mg/kg bw/day	0,0022
PROC8b	 Worker - inhalative, long- term - local	33,04mg/m³	0,075
PROC8b	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC9	 Worker - inhalative, long- term - local	73,42mg/m³	0,10
PROC9	 Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011
PROC15	 Worker - inhalative, long- term	50ppm	0,25
PROC15	 Worker - dermal, long- term - systemic	0,34mg/kg bw/day	0,005

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

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated * (local emission fraction) * (local WWTP flow rate fraction) * (local river flow rate fraction) * (local STP efficiency fraction)

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.

For further information on the assessment method, 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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Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites				
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 PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring				
Environmental Release Categories	ERC4: Industrial use of propart of articles	ocessing aids in processes and products, not becoming			
2.1 Contributing scenario co	ontrolling environmental	l exposure for: ERC4			
Amount used	Annual amount per site	25 ton(s)/year			
Amount used	Daily amount per site	1200 kg/day			
Frequency and duration of use	Continuous exposure	20 days/year			
Environment factors not	Dilution Factor (River)	10			
influenced by risk management	Dilution Factor (Coastal Areas)	100			
Other given operational	Emission or Release Factor: Air	30 %			
conditions affecting environmental exposure	Emission or Release Factor: Water	0,01 %			
	Emission or Release Factor: Soil	0 %			
	Air	Treat air emission to provide a typical removal efficiency of (%):			
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Water	Do not release wastewater directly into environment., Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.			
releases to soil Organizational measures to	Soil	Soil emission controls are not applicable as there is no direct release to soil.			
prevent/limit release from the site	Prevent environmental disc	revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements. vastes in closed, secure containers (e.g., bulk tanks, rs, drums)			
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Domestic sewage treatment plant			
to sewaye treatment plant	Flow rate of sewage	2.000 m3/d			



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	treatment plant effluent	
Canditions and massures related	Degradation efficiency	88 %
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario co PROC8a, PROC8b, PROC		ire for: PROC2, PROC3, PROC4, PROC7,
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Frequency of use	8 hours/day
Other operational conditions affecting workers exposure	Assumes use at not more differently.	than 20 ℃ above ambient temperature, unless stated
	Use in contained batch processes Treatment by heating	Provide extract ventilation to points where emissions occur.(PROC4)
	Filling / preparation of equipment from drums or containers	Ensure material transfers are under containment or extract ventilation. Clear transfer lines prior to de-coupling.(PROC8a)
Technical conditions and	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Clear transfer lines prior to de-coupling.(PROC8b)
measures to control dispersion from source towards the worker	Cleaning with low- pressure washers	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)
	Manual Surfaces cleaning No spraying	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)
	Degreasing small objects in cleaning station	Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC13)
	Cleaning with high pressure washers	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC7)
Conditions and measures related to personal protection, hygiene	Cleaning with low- pressure washers	Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
and health evaluation	Manual Surfaces cleaning No spraying	Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
3. Exposure estimation and	reference to its source	
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Environment

ERC4: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4		Fresh water	PEC - local	0,00117mg/L	0,0045
ERC4		Fresh water sediment	PEC - local	0,00698mg/kg dry weight (d.w.)	0,00558
ERC4		Marine water	PEC - local	0,000132mg/L	0,00508
ERC4		Marine sediment	PEC - local	0,000784mg/k g dry weight (d.w.)	0,00627
ERC4		Soil	PEC - local	0,00114mg/kg dry weight (d.w.)	0,00691
ERC4		Sewage treatment plant (STP)	PEC	0,0625mg/L	0,000096
ERC4			Msafe	173000kg/day	

ESVOC spERC 4.4a.v1 has been used to evaluate the exposure for the environment.

Workers

PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes Level of Exposur		RCR
PROC2, PROC8a, PROC13		Inhalation worker exposure	25ppm	0,125
PROC2, PROC8a, PROC13		Dermal worker exposure	1,371mg/kg/day	0,022
PROC3, PROC4, PROC7		Inhalation worker exposure	50ppm	0,25
PROC3, PROC4, PROC8b		Dermal worker exposure	0,686mg/kg/day	0,011
PROC7		Dermal worker exposure	42,86mg/kg/day	0,68
PROC8b		Inhalation worker exposure	4,5ppm	0,023
PROC10		Inhalation worker exposure	75ppm	0,375
PROC10		Dermal worker exposure	27,43mg/kg/day	0,435

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

Environment

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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.

The following equation may be used for scaling:

$$\frac{m_{\text{spERC}} * (1 - E_{\text{ER,spERC}}) * F_{\text{release, spERC}}}{DF_{\text{spERC}}} \ge \frac{m_{\text{site}} * (1 - E_{\text{ER,site}}) * F_{\text{release, site}}}{DF_{\text{site}}}$$

Where: mspERC: Substance use rate in spERC

EER, spERC: Efficacy of RMM in spERC Frelease, spERC: Initial release fraction in spERC

DFspERC: spERC wastewater dilution factor

Msite: Substance use rate at site EER, site: Efficacy of RMM at site

Frelease, site: Initial release fraction at site DFsite: site-specific wastewater dilution factor

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-

industries-libraries.html).

Health

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

For further information on the assessment method, 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 Sc	enario 4: Use in Cleanir	ng Agents		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)			
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 PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing 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			
2.1 Contributing scenario controlling environmental exposure for: ERC8a				
Amount used	Annual amount per site	0,005 ton(s)/year		
Amount used	Daily amount per site	0,013 kg/day		
Frequency and duration of use	Continuous exposure	365 days/year		
Environment factors not influenced by risk management	Dilution Factor (River) Dilution Factor (Coastal Areas)	100		
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	100 %		
	Emission or Release Factor: Water	100 %		
	Emission or Release Factor: Soil	0 %		
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	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation		
	Soil	Soil emission controls are not applicable as there is no direct release to soil.		
	Prevent environmental discharge consistent with regulatory requirements. Store all VOC-containing wastes in closed, secure containers (e.g., bulk tanks, intermediate bulk containers, drums)			
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	88 %		



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Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.		
	2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13			
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	> 10 kPa		
Frequency and duration of use	Frequency of use	8 hours/day		
Other operational conditions affecting workers exposure	Assumes use at not more than 20 $^{\circ}\!\text{C}$ above ambient temperature, unless stated differently.			
Technical conditions and measures to control dispersion from source towards the worker	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC4)		
	Application of cleaning products in closed systems Outdoor.	Ensure operation is undertaken outdoors.(PROC4)		
	Cleaning of medical devices	Provide extract ventilation to points where emissions occur.(PROC4)		
	Filling / preparation of equipment from drums or containers Outdoor.	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8a)		
	Filling / preparation of equipment from drums or containers Dedicated facility	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC8b)		
	Cleaning with low- pressure washers Rolling, Brushing No spraying	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)		
	Manual Surfaces cleaning	Limit the substance content in the product to 5 %. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC10)		
	Ad hoc manual application via trigger sprays, dipping, etc Rolling, Brushing	Provide extract ventilation to points where emissions occur.(PROC10)		
	Cleaning with high pressure washers Spraying Indoor.	Limit the substance content in the product to 5 %. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC11)		
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	Cleaning with high pressure washers Spraying Outdoor.	Limit the substance content in the product to 1 %. Ensure operation is undertaken outdoors.(PROC11)	
	Dipping, immersion and pouring Manual Surfaces cleaning	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC1	
Conditions and measures related to personal protection, hygiene and health evaluation	Filling / preparation of equipment from drums or containers Outdoor.	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC8a)	
	Ad hoc manual application via trigger sprays, dipping, etc Rolling, Brushing	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC10)	
	Cleaning with high pressure washers Spraying Outdoor.	Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)	

3. Exposure estimation and reference to its source

Environment

ERC8a: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC - local	0,00075mg/L	0,00288
ERC8a		Fresh water sediment	PEC - local	0,00448mg/kg dry weight (d.w.)	0,00358
ERC8a		Marine water	PEC - local	0,0000894mg/ L	0,00344
ERC8a		Marine sediment	PEC - local	0,000533mg/k g dry weight (d.w.)	0,00426
ERC8a		Soil	PEC - local	0,000242mg/k g dry weight (d.w.)	0,00147
ERC8a		Sewage treatment plant (STP)	PEC	0,0274mg/L	0,000042
ERC8a			Msafe	3,05kg/day	

Workers

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PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13: Used ECETOC TRA model.

	THOO2, THOO4, THOO6, THOO6, THOO1, THOO1, THOO1. Used Edition His model.					
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR		
PROC2		Inhalation worker exposure	30ppm	0,15		
PROC2		Dermal worker exposure	0,822mg/kg/day	0,013		
PROC3		Inhalation worker exposure	60ppm	0,30		
PROC3		Dermal worker exposure	0,414mg/kg/day	0,007		
PROC4		Inhalation worker exposure	52,5ppm	0,263		
PROC4		Dermal worker exposure	4,116mg/kg/day	0,065		
PROC8a		Inhalation worker exposure	21ppm	0,105		
PROC8a, PROC8b, PROC13		Dermal worker exposure	8,226mg/kg/day	0,131		
PROC8b, PROC13		Inhalation worker exposure	45ppm	0,225		
PROC10		Inhalation worker exposure	90ppm	0,45		
PROC10		Dermal worker exposure	16,458mg/kg/day	0,261		
PROC11		Inhalation worker exposure	70ppm	0,35		
PROC11		Dermal worker exposure	21,428mg/kg/day	0,34		

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

Environment

Not applicable for wide dispersive uses.

Health

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

For further information on the assessment method, 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



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1. Short title of Exposure So	SU 3: Industrial uses: Use	s of substances as such or in preparations at industrial			
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 PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process PROC18: Greasing at high energy conditions				
Environmental Release Categories	part of articles	ocessing aids in processes and products, not becoming bstances in closed systems			
2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC7					
Amount used	Annual amount per site	25 ton(s)/year			
	Daily amount per site	1250 kg/day			
Frequency and duration of use	Continuous exposure	20 days/year			
Environment factors not influenced by risk management	Dilution Factor (River) Dilution Factor (Coastal Areas)	10 100			
Other given operational	Emission or Release Factor: Air	0,3 %			
conditions affecting environmental exposure	Emission or Release Factor: Water	0,1 %			
	Emission or Release Factor: Soil	0,1 %			
Technical conditions and	Air	Treat air emission to provide a typical removal efficiency of (%):			
measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	Water	Do not release wastewater directly into environment., Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%):, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.			
Organizational measures to prevent/limit release from the	Soil	Soil emission controls are not applicable as there is no direct release to soil.			
site		prevent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.			



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	Store all VOC-containing wastes in closed, secure containers (e.g., bulk tanks, intermediate bulk containers, drums)				
	Type of Sewage Treatment Plant	Domestic sewage treatment plant			
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d			
	Degradation efficiency	88 %			
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.			
2.2 Contributing scenario co PROC7, PROC8a, PROC8		re for: PROC1, PROC2, PROC3, PROC4, DC13, PROC17, PROC18			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	> 10 kPa			
Frequency and duration of use	Frequency of use	8 hours/day			
Other operational conditions affecting workers exposure	Assumes use at not more t differently.	han 20 ℃ above ambient temperature, unless stated			
	General exposures (closed systems)	Handle substance within a closed system.(PROC1)			
	Storage	Store substance within a closed system. Avoid dip sampling.(PROC2)			
	General exposures (closed systems) Batch process with sample collection	Handle substance within a closed system.(PROC3)			
	General exposures (open systems)	Provide extract ventilation to points where emissions occur.(PROC4)			
Technical conditions and	Spraying	Carry out in a vented booth or extracted enclosure. Automate activity where possible.(PROC7)			
measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers Non-dedicated facility	Use drum pumps. Transfer via enclosed lines.(PROC8a)			
	Maintenance of small items	Drain down system prior to equipment break-in or maintenance. Avoid manual contact with wet work pieces. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8a)			
	Bulk transfers	Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. Clear spills immediately.			
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		Remotely vent displaced vapours.(PROC8b)
	Filling / preparation of equipment from drums or containers Dedicated facility	Transfer via enclosed lines. Clear transfer lines prior to de-coupling. Ensure material transfers are under containment or extract ventilation. Clear spills immediately. Remotely vent displaced vapours.(PROC8b)
	Maintenance (of larger plant items) and machine set up with local exhaust ventilation	Ensure material transfers are under containment or extract ventilation.(PROC8b)
	Maintenance (of larger plant items) and machine set up without local exhaust ventilation	Drain or remove substance from equipment prior to break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8b)
	Initial factory fill of equipment	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC9)
	Remanufacture of reject articles	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Ensure material transfers are under containment or extract ventilation. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC9)
	Rolling, Brushing Manual	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC10)
	Treatment by dipping and pouring	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Restrict area of openings to equipment. Allow time for product to drain from workpiece.(PROC13)
	Operation and lubrication of high energy open equipment	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC17, PROC18)
Conditions and measures related to personal protection, hygiene and health evaluation	Spraying	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying. Wear suitable coveralls to prevent exposure to the skin.(PROC7)
3. Exposure estimation and	reference to its source	

Environment

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ERC4, ERC7: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4, ERC7		Fresh water	PEC - local	0,00792mg/L	0,0305
ERC4, ERC7		Fresh water sediment	PEC - local	0,0472mg/kg dry weight (d.w.)	0,0378
ERC4, ERC7		Marine water	PEC - local	0,00806mg/L	0,31
ERC4, ERC7		Marine sediment	PEC - local	0,00481mg/kg dry weight (d.w.)	0,0385
ERC4, ERC7		Soil	PEC - local	0,00356mg/kg dry weight (d.w.)	0,0216
ERC4, ERC7		Sewage treatment plant (STP)	PEC	0,625mg/L	0,000962
ERC4, ERC7			Msafe	4030kg/day	

ESVOC spERC 4.4a.v1 has been used to evaluate the exposure for the environment.

Workers

PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18: Used ECETOC TRA model.

Contributing Scenario			RCR	
PROC1		Inhalation worker exposure	0,01ppm	< 0,001
PROC1		Dermal worker exposure	0,03mg/kg/day	< 0,001
PROC2		Inhalation worker exposure	25ppm	0,125
PROC2		Dermal worker exposure	1,37mg/kg/day	0,022
PROC3, PROC7, PROC8a		Inhalation worker exposure	50ppm	0,25
PROC3		Dermal worker exposure	0,69mg/kg/day	0,011
PROC4		Inhalation worker exposure	10ppm	0,05
PROC4, PROC9		Dermal worker exposure	6,86mg/kg/day	0,109
PROC7		Dermal worker exposure	8,572mg/kg/day	0,136
PROC8b		Inhalation worker exposure	30ррт	0,15
PROC8a, PROC8b, PROC13, PROC18		Dermal worker exposure	13,71mg/kg/day	0,218
PROC9		Inhalation worker exposure	60ppm	0,3
PROC10		Inhalation worker	75ppm	0,375
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	exposure		
PROC10, PROC17	 Dermal worker exposure	27,43mg/kg/day	0,435
PROC13	 Inhalation worker exposure	87,5ppm	0,438
PROC17, PROC18	 Inhalation worker exposure	5ppm	0,025

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

Environment

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.

The following equation may be used for scaling:

$$\frac{m_{\text{spERC}} * (1 - E_{\text{ER,spERC}}) * F_{\text{release, spERC}}}{DF_{\text{spERC}}} \ge \frac{m_{\text{site}} * (1 - E_{\text{ER,site}}) * F_{\text{release, site}}}{DF_{\text{site}}}$$

Where: mspERC: Substance use rate in spERC

EER, spERC: Efficacy of RMM in spERC

Frelease, spERC: Initial release fraction in spERC DFspERC: spERC wastewater dilution factor

Msite: Substance use rate at site EER, site: Efficacy of RMM at site

Frelease, site: Initial release fraction at site DFsite: site-specific wastewater dilution factor

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Health

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

For further information on the assessment method, 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



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PROC2: Use in closed, continuous process with occasional controlled of PROC3: Use in closed, continuous process with occasional controlled of PROC3: Use in closed, continuous process with occasional controlled of PROC3: Use in batch and other process (synthesis) where opportunity exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation (charging/ discharging) vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (de filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC16: Greasing at high energy conditions and in partly open proc PROC18: Greasing at high energy conditions PROC20: Heat and pressure transfer fluids in dispersive, professional to closed systems Ernvironmental Release ERC8a: Wide dispersive indoor use of processing aids in open systems Erncy and duration of use Ernca: Wide dispersive indoor use of processing aids in open systems Environment factors not influenced by risk management Environment factors not influenced by risk management Cother given operational conditions and measures at process level (source) to prevent release Factor: Water Emission or Release Factor: Soil Frewent environmental discharges, air emissions is not required purposes of REACH compliance but may be needed to comply with other environmental legislation Prevent environmental discharges are not of the purpose of REACH compliance but may be needed to comply wi	Short title of Exposure Sc Main User Groups	SU 22: Professional uses:	Public domain (administration, education,		
PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open proc PROC18: Greasing at high energy conditions and in partly open proc PROC18: Greasing at high energy conditions and in partly open proc PROC18: Greasing at high energy conditions and measures to prevent/limit release from the	·	entertainment, services, craftsmen) PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing			
Annual amount per site 0,005 ton(s)/year		PROC13: Treatment of art PROC17: Lubrication at hi PROC18: Greasing at high PROC20: Heat and pressu	icles by dipping and pouring gh energy conditions and in partly open process n energy conditions		
Amount used Annual amount per site 0,005 ton(s)/year Daily amount per site 0,013 kg/day Frequency and duration of use Continuous exposure 365 days/year Environment factors not influenced by risk management Dilution Factor (River) 10 Dilution Factor (Coastal Areas) 100 Emission or Release Factor: Air Emission or Release Factor: Water 100 % 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		ERC8a: Wide dispersive in	ndoor use of processing aids in open systems		
Amount used Daily amount per site 0,013 kg/day Frequency and duration of use Environment factors not influenced by risk management Other given operational conditions affecting environmental exposure Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil 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 Daily amount per site 0,013 kg/day Continuous exposure 365 days/year 100 Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Soil Treatment of air emissions is not required purposes of REACH compliance but may be needed to comply with other environmental eigislation Soil emission controls are not applicable and no direct release to soil. Prevent environmental discharge consistent with regulatory requirement Store all VOC-containing wastes in closed, secure containers (e.g., bullitatemedic bull cast in page 4.	2.1 Contributing scenario co	ontrolling environmenta	l exposure for: ERC8a		
Frequency and duration of use Continuous exposure Environment factors not influenced by risk management Other given operational conditions affecting environmental exposure 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 Dilution Factor (River) Dilution Factor (Coastal Areas) 100 Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Water Emission or Release Factor: Soil Treatment of air emissions is not required purposes of REACH compliance but may be needed to comply with other environmental legislation Soil emission controls are not applicable at no direct release to soil. Prevent environmental discharge consistent with regulatory requirements of the purpose of Reach and the purpose o	Amount used	Annual amount per site	0,005 ton(s)/year		
Environment factors not influenced by risk management Dilution Factor (River) Dilution Factor (Coastal Areas) 100 Cother given operational conditions affecting environmental exposure Emission or Release Factor: Air Emission or Release Factor: Water Emission or Release Factor: Water Emission or Release Factor: Soil Treatment of air emissions is not required purposes of REACH compliance but may be needed to comply with other environmental legislation Air Treatment of air emissions is not required purposes of REACH compliance but may be needed to comply with other environmental legislation Soil emission controls are not applicable at no direct release to soil. Prevent environmental discharge concistent with regulatory requirements of the purpose of REACH compliance but may be needed to comply with other environmental legislation Soil emission controls are not applicable at no direct release to soil. Prevent environmental discharge concistent with regulatory requirements of the purpose of REACH compliance but may be needed to comply with other environmental legislation.	Amount used	Daily amount per site	0,013 kg/day		
Dilution Factor (Coastal Areas) Dilution Factor (Coastal Areas) 100	Frequency and duration of use	Continuous exposure	365 days/year		
Dilution Factor (Coastal Areas) 100	Environment factors not	Dilution Factor (River)	10		
Other given operational conditions affecting environmental exposure Emission or Release Factor: Water 100 %			100		
conditions affecting environmental exposure Emission or Release Factor: Water Emission or Release Factor: Soil 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 Emission or Release 100 % Treatment of air emissions is not required purposes of REACH compliance but may be needed to comply with other environmental legislation Soil emission controls are not applicable and odirect release to soil. Prevent environmental discharge consistent with regulatory requirements of the section of the secti			100 %		
Emission or Release Factor: Soil 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 Emission or Release	conditions affecting		100 %		
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 Air Durposes of REACH compliance but may be needed to comply with other environmental legislation Soil emission controls are not applicable and odirect release to soil. Prevent environmental discharge consistent with regulatory requirements store all VOC-containing wastes in closed, secure containers (e.g., bull intermediate bull applicable and other prevents of the purposes of REACH compliance but may be needed to comply with other environmental degislation	environmental exposure		0 %		
discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the	measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation		
Organizational measures to prevent/limit release from the Prevent environmental discharge consistent with regulatory requirement Store all VOC-containing wastes in closed, secure containers (e.g., bull intermediate bull, containing wastes)	discharges, air emissions and	Soil	Soil emission controls are not applicable as there no direct release to soil.		
Site State of the	Organizational measures to Prevent environmental discharge consistent with regulatory requirements				
Conditions and measures related to sewage treatment plant Type of Sewage Domestic sewage treatment plant		Type of Sewage	Domestic sewage treatment plant		



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	Treatment Plant			
	Flow rate of sewage treatment plant effluent	2.000 m3/d		
	Degradation efficiency	88 %		
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.		
		re for: PROC1, PROC2, PROC3, PROC4, ROC13, PROC17, PROC18, PROC20		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Frequency of use	8 hours/day		
Other operational conditions affecting workers exposure	Assumes use at not more to differently.	than 20 °C above ambient temperature, unless stated		
	General exposures (closed systems)	Handle substance within a closed system.(PROC1)		
	Storage	Store substance within a closed system.(PROC2)		
	General exposures (closed systems) Batch process with sample collection	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Handle substance within a closed system.(PROC3)		
	General exposures (open systems)	Provide extract ventilation to points where emissions occur. Ensure material transfers are under containment or extract ventilation.(PROC4)		
Technical conditions and measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers Non-dedicated facility	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Use drum pumps or carefully pour from container. Provide enhanced general ventilation by mechanical means.(PROC8a)		
	Maintenance (of larger plant items) and machine set up	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Drain down system prior to equipment break-in or maintenance. Clear transfer lines prior to de-coupling.(PROC8a)		
	Maintenance (of larger plant items) and machine set up Elevated temperature	Provide extract ventilation to points where emissions occur. Drain down system prior to equipment break-in or maintenance. Clear transfer lines prior to de-coupling.(PROC8a)		
	Bulk transfers	Transfer via enclosed lines.		
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		Clear transfer lines prior to de-coupling. Handle substance within a closed system.(PROC8b)
	Filling / preparation of equipment from drums or containers Dedicated facility	Transfer via enclosed lines. Use drum pumps or carefully pour from container.(PROC8b)
	Maintenance of small items	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Drain or remove substance from equipment prior to break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC9)
	Rolling, Brushing Manual with local exhaust ventilation	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Provide extract ventilation to points where emissions occur.(PROC10)
	Spraying with local exhaust ventilation	Limit the substance content in the mixture to 25 %. Carry out in a vented booth or extracted enclosure.(PROC11)
	Spraying without local exhaust ventilation	Limit the substance content in the mixture to 25 %.(PROC11)
	Treatment by dipping and pouring	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Allow time for product to drain from workpiece.(PROC13)
	Operation and lubrication of high energy open equipment Indoor.	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC17, PROC18)
	Operation and lubrication of high energy open equipment Outdoor.	Limit the substance content in the product to 5 %. Ensure operation is undertaken outdoors.(PROC17)
	Restrict area of openings to	equipment.(PROC20)
	Rolling, Brushing Manual without local exhaust ventilation	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(PROC10)
Conditions and measures related to personal protection, hygiene and health evaluation	Spraying without local exhaust ventilation	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.(PROC11)

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3. Exposure estimation and reference to its source

Environment

ERC8a: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC - local	0,00075mg/L	0,00288
ERC8a		Fresh water sediment	PEC - local	0,00448mg/kg dry weight (d.w.)	0,00358
ERC8a		Marine water	PEC - local	0,0000894mg/ L	0,00344
ERC8a		Marine sediment	PEC - local	0,000533mg/k g dry weight (d.w.)	0,00426
ERC8a		Soil	PEC - local	0,000242mg/k g dry weight (d.w.)	0,00147
ERC8a		Sewage treatment plant (STP)	PEC	0,0274mg/L	0,000042
ERC8a			Msafe	3,05kg/day	

Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation worker exposure	0,01ppm	< 0,001
PROC1		Dermal worker exposure	0,03mg/kg/day	< 0,001
PROC2, PROC4, PROC8b, PROC18		Inhalation worker exposure	50ppm	0,25
PROC2, PROC4, PROC18		Dermal worker exposure	1,37mg/kg/day	0,022
PROC3, PROC10, PROC17		Inhalation worker exposure	70ppm	0,35
PROC3		Dermal worker exposure	0,69mg/kg/day	0,011
PROC8a		Inhalation worker exposure	80ppm	0,4
PROC8a, PROC8b, PROC13		Dermal worker exposure	13,71mg/kg/day	0,218
PROC9		Inhalation worker	15ppm	0,075



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	exposure		
PROC9	 Dermal worker exposure	6,86mg/kg/day	0,109
PROC10	 Dermal worker exposure	Dermal worker exposure 27,43mg/kg/day 0,4	
PROC11	 Inhalation worker exposure 60ppm 0,3		0,3
PROC11	 Dermal worker exposure 12,857mg/kg/day		0,204
PROC13	 Inhalation worker exposure	75ppm	0,375
PROC17	 Dermal worker exposure	5,486mg/kg/day	0,087
PROC20	 Inhalation worker exposure 25ppm 0,12		0,125
PROC20	 Dermal worker exposure	1,71mg/kg/day	0,027

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

Environment

Not applicable for wide dispersive uses.

Health

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

For further information on the assessment method, 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



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1. Short title of Exposure Sce	anario 7· I lee in lahorato	oriae	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC15: Use as laborato	ry reagent	
Environmental Release Categories		ocessing aids in processes and products, not becoming	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Annual site tonnage (tons/year):	30 tonnes	
A	Daily amount per site	1000 kg	
Amount used	Fraction used at the main local source.	0,01	
	Annually total	3000 tonnes	
Frequency and duration of use	Continuous exposure	300 days/year	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not influenced by risk management	Dilution Factor (River)	10	
illiluenced by fisk management	Dilution Factor (Coastal Areas)	100	
	Emission or Release Factor: Air	100 %	
Other given operational	Emission or Release Factor: Water	100 %	
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %	
	Indoor use.		
	Processing temperature: A	mbient temperature	
	Processing pressure: Amb	ient pressure.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation	
measures to reduce or limit discharges, air emissions and releases to soil	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required., Do not release wastewater directly into environment.	
Organizational measures to prevent/limit release from the site		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.	
Conditions and measures related	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d	
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	Percentage removed from waste water	87 %	
	Sludge Treatment	Disposal or recovery	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC15	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	98 hPa	
Amount used	n.a. in tier 1 TRA MODEL		
	Frequency of use	< 240 days/year	
Frequency and duration of use	Frequency of use	> 4 days/week	
Troquency and duration of dec	Exposure duration per day	60 - 240 min	
Human factors not influenced by risk management	Exposed skin areas	One hand, face side only. 240 cm ²	
Other operational conditions affecting workers exposure	Indoor use.		
Technical conditions and measures to control dispersion from source towards the worker	Laboratory activities	Handle in a fume cupboard or under extract ventilation.	
Conditions and measures related to personal protection, hygiene and health evaluation	Laboratory activities	Wear suitable gloves (tested to EN374) and eye protection.	

3. Exposure estimation and reference to its source

Environment

ERC4: EUSES 2.1

Specific conditions	Compartment	Value	Level of Exposure	RCR
	Fresh water	PEC	0,0839mg/L	0,323
	Marine water	PEC	0,0084mg/L	0,323
	Fresh water sediment	PEC	0,1115mg/kg	0,398
	Marine sediment	PEC	0,0112mg/kg	0,040
	Soil	PEC	0,0002mg/kg	< 0,001
	Sewage treatment plant (STP)	PEC	0,8219mg/L	0,001
	Total daily intake via local environment	PEC	0,0021mg/kg bw/day	< 0,001
	 	Fresh water Marine water Fresh water Soil Soil Sewage treatment plant (STP) Total daily intake via local	Fresh water PEC Marine water PEC Fresh water PEC Sediment PEC Soil PEC Sewage treatment plant (STP) Total daily intake via local PEC	Specific conditions Compartment Value Exposure Fresh water PEC 0,0839mg/L Marine water PEC 0,0084mg/L Fresh water sediment PEC 0,1115mg/kg Marine sediment PEC 0,0112mg/kg Soil PEC 0,0002mg/kg Sewage treatment plant (STP) PEC 0,8219mg/L Total daily intake via local PEC 0,0021mg/kg bw/day bw/day

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Workers

PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC15		Worker - inhalative, long- term - local	110,12mg/m³	0,151
PROC15		Worker - dermal, long- term - systemic	0,343mg/kg bw/day	0,005

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

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated * (local emission fraction) * (local WWTP flow rate fraction) * (local river flow rate fraction) * (local STP efficiency fraction)

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.

For further information on the assessment method, 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



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1. Short title of Exposure Sc	enario 8: Use in laborato	pries	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC15: Use as laborato		
Environmental Release Categories	ERC8a: Wide dispersive in	ndoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Annual site tonnage (tons/year):	30 tonnes	
A	Daily amount per site	2 kg	
Amount used	Fraction used at the main local source.	0,01	
	Annually total	3000 tonnes	
Frequency and duration of use	Continuous exposure	300 days/year	
	Flow rate of receiving surface water	18.000 m3/d	
Environment factors not influenced by risk management	Dilution Factor (River)	10	
mildenced by fisk management	Dilution Factor (Coastal Areas)	100	
	Emission or Release Factor: Air	100 %	
Other given operational	Emission or Release Factor: Water	100 %	
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %	
	Indoor use.		
	Processing temperature: A	Ambient temperature	
	Processing pressure: Amb	ient pressure.	
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation	
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required., Do not release wastewater directly into environment.	
		prevent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.	
Conditions and measures related	Type of Sewage Treatment Plant	Municipal sewage treatment plant	
to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d	
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Percentage removed from waste water	87 %	
Sludge Treatment	Disposal or recovery	
Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.	
ntrolling worker exposu	re for: PROC15	
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	98 hPa	
n.a. in tier 1 TRA MODEL		
Frequency of use	< 240 days/year	
Frequency of use	> 4 days/week	
Exposure duration per day	60 - 240 min	
Exposed skin areas	One hand, face side only. 240 cm ²	
Indoor use.		
Laboratory activities	Handle in a fume cupboard or under extract ventilation.	
Laboratory activities	Wear suitable gloves (tested to EN374) and eye protection.	
	from waste water Sludge Treatment Waste treatment Introlling worker exposu Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure n.a. in tier 1 TRA MODEL Frequency of use Exposure duration per day Exposed skin areas Indoor use.	

3. Exposure estimation and reference to its source

Environment

ERC8a: EUSES 2.1

2,1000, 20020 2.11					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC	0,0839mg/L	0,323
ERC8a		Marine water	PEC	0,0084mg/L	0,323
ERC8a		Fresh water sediment	PEC	0,1115mg/kg	0,398
ERC8a		Marine sediment	PEC	0,0112mg/kg	0,040
ERC8a		Soil	PEC	0,0002mg/kg	< 0,001
ERC8a		Sewage treatment plant (STP)	PEC	0,8219mg/L	0,001
ERC8a		Total daily intake via local environment	PEC	0,0021mg/kg bw/day	< 0,001

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Workers

PROC15: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC15		Worker - inhalative, long- term - local	110,12mg/m³	0,151
PROC15		Worker - dermal, long- term - systemic	0,343mg/kg bw/day	0,005

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

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated * (local emission fraction) * (local WWTP flow rate fraction) * (local river flow rate fraction) * (local STP efficiency fraction)

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.

For further information on the assessment method, 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



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Short title of Exposure Sc Main User Groups Sectors of end-use		ion agent and/or processing aid		
·	SU 3: Industrial uses: Use			
Sectors of end-use	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Coolors of one doo	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 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			
Environmental Release Categories	ERC1: Manufacture of sub	ostances		
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC1		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
	Annual site tonnage (tons/year):	300 tonnes		
Amount used	Daily amount per site	1 tonnes		
Amount used	Fraction used at the main local source.	0,1		
	Annually total	3000 tonnes		
Frequency and duration of use	Continuous exposure	300 days/year		
Environment factors not	Flow rate of receiving surface water	18.000 m3/d		
influenced by risk management	Dilution Factor (River)	10		
	Dilution Factor (Coastal Areas)	100		
	Emission or Release Factor: Air	0,5 %		
Other given operational	Emission or Release Factor: Water	1 %		
conditions affecting environmental exposure	Emission or Release Factor: Soil	0,01 %		
	Indoor use.			
	Processing temperature: A	mbient temperature		
	Processing pressure: Ambi	ent pressure.		
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Use containment measures to reduce fu emissions., Treatment of air emissions is required for the purposes of REACH cor			
PA100623 001	48/69	E		



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releases to soil Organizational measures to		abatement equipment from LEV systems if required by local legislation.		
prevent/limit release from the site	Keep container tightly closed. Store in a bounded area.			
	Water	Onsite wastewater treatment required, Do not release wastewater directly into environment.		
	Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)		
		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		
to sewage treatment plant	Percentage removed from waste water	87 %		
	Sludge Treatment	Disposal or recovery		
Conditions and measures related to external treatment of waste for	Waste treatment	Hazardous waste incineration., Dispose for use in recycled fuels.		
disposal	Disposal methods	Dispose of waste product or used containers according to local regulations.		
2.2 Contributing scenario co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	98 hPa		
Amount used	n.a. in tier 1 TRA MODEL			
	Frequency of use	< 240 days/year		
	Frequency of use	> 4 days/week		
Frequency and duration of use	Exposure duration per day	> 240 min(PROC3, PROC4)		
	Exposure duration per day	60 - 240 min(PROC8a, PROC8b)		
Human factors not influenced by	Exposed skin areas	Palms of both hands 480 cm² (PROC3, PROC4)		
risk management	Exposed skin areas	Two hands 960 cm ² (PROC8a, PROC8b)		
Other operational conditions affecting workers exposure	Indoor use.			
Technical conditions and measures to control dispersion from source towards the worker	General exposures Use in contained batch processes	Handle substance within a predominantly closed system provided with extract ventilation. Ensure material transfers are under containment or extract ventilation.		
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		Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC3)
	General exposures Use in contained batch processes with sample collection	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).(PROC4)
	Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)
Conditions and measures related		ed to EN374) and eye protection.
to personal protection, hygiene and health evaluation	Butyl rubber gloves offer go	boa protection

3. Exposure estimation and reference to its source

Environment

ERC1: EUSES 2.1

ENOT. E00E0 2.1					
Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1		Fresh water	PEC	0,0106mg/L	0,041
ERC1		Marine water	PEC	0,0010mg/L	0,041
ERC1		Fresh water sediment	PEC	0,0141mg/kg	0,050
ERC1		Marine sediment	PEC	0,0014mg/kg	0,005
ERC1		Soil	PEC	0,0031mg/kg	0,014
ERC1		Sewage treatment plant (STP)	PEC	0,0778mg/L	< 0,001
ERC1		Total daily intake via local environment	PEC	0,0004mg/kg bw/day	< 0,001



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Workers

PROC3, PROC4, PROC8a, PROC8b: Use of ECETOC TRA Version 2 with modifications.

1 11000, 1 11001, 1 110000, 1000 of Editor 1101 voluint E with modifications.					
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC3		Worker - inhalative, long- term - local	36,71mg/m³	0,050	
PROC3		Worker - dermal, long- term - systemic	0,03mg/kg bw/day	< 0,001	
PROC4		Worker - inhalative, long- term - local 36,71mg/m³		0,050	
PROC4		Worker - dermal, long- term - systemic 0,69mg/kg bw/day		0,011	
PROC8a		Worker - inhalative, long- term - local	55,06mg/m ³	0,075	
PROC8a		Worker - dermal, long- term - systemic 0,14mg/kg bw/day		0,0022	
PROC8b		Worker - inhalative, long- term - local 9,91mg/m ³		0,014	
PROC8b		Worker - dermal, long- term - systemic	0,69mg/kg bw/day	0,011	

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

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated * (local emission fraction) * (local WWTP flow rate fraction) * (local river flow rate fraction) * (local STP efficiency fraction)

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.

For further information on the assessment method, 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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1. Short title of Exposure Sc	enario 10: Uses in coatir	ngs			
Main User Groups	SU 22: Professional uses:	Public domain (administration, education,			
·	entertainment, services, cra	•			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available				
Environmental Release Categories		door use of processing aids in open systems utdoor use of processing aids in open systems			
	· ·				
2.1 Contributing scenario co	entrolling environmental	exposure for: ERC8a, ERC8d			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
Amount used	Daily amount per site	3 kg			
	Fraction used at the main local source.	0,002			
	Annually total	5000 tonnes			
Frequency and duration of use	Continuous exposure	365 days/year			
	Flow rate of receiving surface water	18.000 m3/d			
Environment factors not influenced by risk management	Dilution Factor (River)	10			
a.agea.	Dilution Factor (Coastal Areas)	100			
	Emission or Release Factor: Air	90 %			
Other given operational	Emission or Release Factor: Water	90 %			
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %			
	Indoor use.				
	Processing temperature: A	mbient temperature			
	Processing pressure: Ambi	ient temperature			
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Air	Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation			
measures to reduce or limit discharges, air emissions and releases to soil	Water	If discharging to domestic sewage treatment plant, no onsite wastewater treatment required.			
Organizational measures to	Water	Treat onsite wastewater (prior to receiving water			



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prevent/limit release from the site		discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 87 %)
		revent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.
	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d
to sewage treatment plant	Percentage removed from waste water	87 %
	Sludge Treatment	Disposal or recovery
Conditions and measures related to external treatment of waste for	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
disposal	Disposal methods	Dispose of waste product or used containers according to local regulations.
2.2 Contributing scenario co PROC10, PROC11, PROC	ntrolling worker exposu 13, PROC19	re for: PROC1, PROC2, PROC8a, PROC8b,
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
Product characteristics	Physical Form (at time of use)	liquid, spray aerosol
	Vapour pressure	98 hPa
Amount used	n.a. in tier 1 TRA MODEL	
	Frequency of use	< 300 days/year
	Frequency of use	> 4 days/week
Frequency and duration of use	Exposure duration per day	> 240 min(PROC1, PROC2)
rrequeries and duration of use	Exposure duration per day	60 - 240 min(PROC10, PROC11, PROC13)
	Exposure duration per day	15 - 60 min(PROC8a, PROC8b, PROC19)
Human factors not influenced by risk management	Exposed skin areas	Hands and forearms. 1500 cm ²
Other operational conditions	Indoor use.	
affecting workers exposure	Outdoor use.(PROC1)	
	General exposures Continuous process	Clear spills immediately. Ensure operation is undertaken outdoors.(PROC1)
Technical conditions and measures to control dispersion from source towards the worker	General exposures Continuous process with sample collection	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC2)
	Bulk transfers	Ensure material transfers are under containment or



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	Non-dedicated facility	extract ventilation. Provide extract ventilation to points where emissions occur. Use drum pumps or carefully pour from container. Locate bulk storage outdoors. Clear spills immediately.(PROC8a)
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors. Clear spills immediately.(PROC8b)
	Roller, spreader, flow application cleaning Machine Manual	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC10)
	Treatment by dipping and pouring Machine Manual	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC13)
	Spraying/fogging by manual application with potential for aerosol generation	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Ensure that a spraying booth is used. Clear spills immediately.(PROC11)
	Transfer from/pouring from containers Mixing operations (closed systems) Manual without local exhaust ventilation Indoor.	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Clear spills immediately.(PROC19)
Conditions and measures related to personal protection, hygiene	following PPE: Wear a respirator conforming	tional control measures are not feasible, then adopt ng to EN140 with Type A filter or better.
and health evaluation	Wear suitable gloves (teste Butyl rubber gloves offer go	ed to EN374) and eye protection. ood protection

3. Exposure estimation and reference to its source

Environment

ERC8a, ERC8d: EUSES 2.1

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

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Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a, ERC8d		Fresh water	PEC	0,139mg/L	0,535
ERC8a, ERC8d		Marine water	PEC	0,014mg/L	0,535
ERC8a, ERC8d		Fresh water sediment	PEC	0,186mg/kg	0,664
ERC8a, ERC8d		Marine sediment	PEC	0,019mg/kg	0,066
ERC8a, ERC8d		Soil	PEC	0,0002mg/kg	< 0,001
ERC8a, ERC8d		Sewage treatment plant (STP)	PEC	1,369mg/L	0,002
ERC8a, ERC8d		Total daily intake via local environment	PEC	0,003mg/kg bw/day	< 0,001

Workers

PROC1, PROC2, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC19: Use of ECETOC TRA Version 2 with modifications.

Contributing Scenario	Specific conditions	fic conditions		RCR
PROC1		Worker - inhalative, long- term - local	0,154mg/m³	< 0,001
PROC1		Worker - dermal, long- term - systemic	0,342mg/kg bw/day	0,0054
PROC2		Worker - inhalative, long- term - local	22,03mg/m³	0,03
PROC2		Worker - dermal, long- term - systemic	0,137mg/kg bw/day	0,0022
PROC8a		Worker - inhalative, long- term - local	44,05mg/m³	0,06
PROC8a		Worker - dermal, long- term - systemic	0,137mg/kg bw/day	0,0022
PROC8b		Worker - inhalative, long- term - local	11,01mg/m³	0,015
PROC8b		Worker - dermal, long- term - systemic	0,686mg/kg bw/day	0,011
PROC10		Worker - inhalative, long- term - local	132,15mg/m³	0,18
PROC10		Worker - dermal, long- term - systemic	1,37mg/kg bw/day	0,022
PROC11		Worker - inhalative, long- term - local	264,3mg/m³	0,36
PROC11		Worker - dermal, long- term - systemic	'	
PROC13		Worker - inhalative, long- term - local 66,08mg/m³ 0		0,091
PROC13		Worker - dermal, long-	0,69mg/kg bw/day	0,011



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	term - systemic		
PROC19	 Worker - inhalative, long- term - local	220,25mg/m ³	0,30
PROC19	 Worker - dermal, long- term - systemic	28,28mg/kg bw/day	0,45

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

If the local environmental emission conditions deviate significantly from the used default values, please use the below algorithm to estimate the correct local emissions and RCRs:

PECcorrected = PECcalculated * (local emission fraction) * (local WWTP flow rate fraction) * (local river flow rate fraction) * (local STP efficiency fraction)

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.

For further information on the assessment method, 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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1. Short title of Exposure Sce	nario 11: Use in agrocl	nemicals			
Main User Groups		SU 22: Professional uses: Public domain (administration, education,			
Process categories	PROC4: Use in batch and exposure arises PROC8a: Transfer of subsvessels/ large containers a PROC8b: Transfer of subsvessels/ large containers a	PROC2: Use in closed, continuous process with occasional controlled exposure 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 PROC11: Non industrial spraying			
Environmental Release Categories	ERC8c: Wide dispersive in ERC8d: Wide dispersive of	ndoor use of processing aids in open systems ndoor use resulting in inclusion into or onto a matrix outdoor use of processing aids in open systems outdoor use resulting in inclusion into or onto a matrix			
2.1 Contributing scenario con	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC8d, ERC8f			
Amount used	Daily amount per site	2,7 kg			
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	Emission or Release Factor: Air	0,9			
conditions affecting environmental exposure	Emission or Release Factor: Water	0,01			
·	Emission or Release Factor: Soil	0,09			
Technical conditions and measures at process level		prevent soil and water pollution in the event of spillage. charge consistent with regulatory requirements.			
(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					
Conditions and measures related	Domestic sewage treatme	nt is not assumed.			
to sewage treatment plant Conditions and measures related to external treatment of waste for disposal	Waste treatment Waste treatment Waste treatment Waste treatment External treatment and disposal of waste should comply with applicable local and/or national regulations.				
•	ntrolling worker exposu	ure for: PROC2, PROC4, PROC8a, PROC8b,			
Product characteristics	Concentration of the	Covers percentage substance in the product up to			



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Substance in Mixture/Article	25 %.
Physical Form (at time of use)	liquid
Vapour pressure	98 hPa
n.a. in tier 1 TRA MODEL	
Frequency of use	< 240 days/year
Frequency of use	> 4 days/week
Exposure duration per day	> 240 min
Exposure duration per day	< 60 min(PROC8a, PROC13)
Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation	Carry out in a vented booth or extracted enclosure. Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.(PROC11)
Equipment cleaning and maintenance	Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8a)
Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation	Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.(PROC11)
Spraying/fogging by manual application Outdoor. with potential for aerosol generation	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.(PROC11)
	Mixture/Article Physical Form (at time of use) Vapour pressure n.a. in tier 1 TRA MODEL Frequency of use Frequency of use Exposure duration per day Exposure duration per day Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation Equipment cleaning and maintenance Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation Spraying/fogging by manual application Indoor. with local exhaust ventilation with potential for aerosol generation Spraying/fogging by manual application Outdoor. with potential for aerosol

3. Exposure estimation and reference to its source

Environment

EUSES 2.1

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
		Fresh water	PEC	0,66μg/L	0,00254
		Marine water	PEC	0,117μg/L	0,0045
		Fresh water	PEC	3,97µg/kg dry	0,00318



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	sediment		weight (d.w.)	
 	Marine sediment	PEC	0,703μg/kg dry weight (d.w.)	0,00562
 	Soil	PEC	0,247μg/kg dry weight (d.w.)	0,00103
 	Sewage treatment plant (STP)	PEC	0,165μg/L	< 0,0001

ESVOC spERC 8.11a.v1 has been used to evaluate the exposure for the environment.

Workers

PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2		Inhalation worker exposure	12ppm	0,06
PROC2		Dermal worker exposure	0,822mg/kg/day	0,013
PROC4		Inhalation worker exposure	30ррт	0,15
PROC4		Dermal worker exposure	4,116mg/kg/day	0,065
PROC8a		Inhalation worker exposure	worker 12ppm	
PROC8a		Dermal worker exposure	8,226mg/kg/day	0,131
PROC8b		Inhalation worker exposure	30ррт	0,15
PROC8b		Dermal worker exposure	4,116mg/kg/day	0,065
PROC11		Inhalation worker exposure	30ррт	0,15
PROC11		Dermal worker exposure 12,857mg/kg/day		0,204
PROC13		Inhalation worker exposure	12ppm	0,06
PROC13		Dermal worker exposure	8,226mg/kg/day	0,131

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.

For further information on the assessment method, see: http://www.ecetoc.org/tra

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Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)			
Chemical product category	PC1: Adhesives, sealants			
Environmental Release	PC9a: Coatings and paints ERC8a: Wide dispersive in	door use of processing aids in open systems		
Categories	'			
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a		
Product characteristics	Concentration of the Substance in the Mixture/Article Covers percentage substance in the Mixture/Article			
	Daily amount per site	0,3 kg		
Amount used	Fraction used at the main local source.	0,002		
	Annually total	500 tonnes		
Frequency and duration of use	Continuous exposure	365 days/year		
	Flow rate of receiving surface water	18.000 m3/d		
Environment factors not influenced by risk management	Dilution Factor (River)	10		
mideliced by not management	Dilution Factor (Coastal Areas)	100		
	Emission or Release Factor: Air	90 %		
Other given operational	Emission or Release Factor: Water	90 %		
conditions affecting environmental exposure	Emission or Release Factor: Soil	0 %		
	Indoor use.			
	Processing temperature: Ambient temperature			
	Processing pressure: Amb	ent pressure.		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related to sewage treatment plant	Flow rate of sewage treatment plant effluent	2.000 m3/d		
-	Degradation efficiency	70 %		
	Sludge Treatment	Disposal or recovery		
Conditions and measures related to external treatment of waste for				
disposal 2.2 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glues, hobby use		
Activity	spray application			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.		



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	Physical Form (at time of use)	liquid	
	Vapour pressure	98 hPa	
Amount used	Amount used per event	150 g	
	Frequency of use	0 - 5 events/year	
Frequency and duration of use	Exposure duration per event	60 min	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 35 cm ²	
risk management			
Other given operational	Room size	20 m3	
conditions affecting consumers exposure			

2.3 Contributing scenario controlling consumer exposure for: PC1: Glues DIY-use (carpet glue, tile glue, wood parquet glue)

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	98 hPa	
Amount used	Amount used per event	150 g	
	Frequency of use	0 - 5 events/year	
Frequency and duration of use	Exposure duration per event	60 min	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm ²	
Other given operational conditions affecting consumers exposure	Room size	20 m3	

2.4 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint

Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.
Physical Form (at time of use)	liquid
Vapour pressure	98 hPa
Amount used per event	150 g
Frequency of use	0 - 5 events/year
Exposure duration per event	60 min
Exposed skin areas	Covers skin contact area up to 428 cm ²
Room size	20 m3
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Frequency of use Exposure duration per event Exposed skin areas

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2.5 Contributing scenario controlling consumer exposure for: PC9a: Aerosol spray can

Concentration of the Covers percentage substance in the product up to

	Substance in Mixture/Article	25 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	98 hPa
Amount used	Amount used per event	150 g
	Frequency of use	0 - 5 events/year
Frequency and duration of use	Exposure duration per event	25 min
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm ²

20 m3

exposure 3. Exposure estimation and reference to its source

Room size

Environment

risk management
Other given operational

ERC8a: EUSES 2.1

conditions affecting consumers

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a		Fresh water	PEC	0,0044mg/L	0,017
ERC8a		Marine water	PEC	0,0004mg/L	0,017
ERC8a		Fresh water sediment	PEC	0,0059mg/kg	0,021
ERC8a		Marine sediment	PEC	0,0005mg/kg	0,002
ERC8a		Soil	PEC	0,0001mg/kg	< 0,001
ERC8a		Sewage treatment plant (STP)	PEC	0,0161mg/L	< 0,001
ERC8a		Total daily intake via local environment	PEC	0,0001mg/kg bw/day	< 0,001

Consumers

PC1, PC9a: Solvent rich, high solid, water borne paint, PC9a: Aerosol spray can: ConsExpo 4.1

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC1		Consumer inhalation exposure	29,9mg/m³	0,245
PC1		Consumer dermal exposure	0,04mg/kg bw/day	0,00108
PC9a: Solvent		Consumer inhalation	0,03mg/m ³	0,000246



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rich, high solid, water borne paint	exposure		
PC9a: Solvent rich, high solid, water borne paint	 Consumer dermal exposure	0,02mg/kg bw/day	0,000541
PC9a: Aerosol spray can	 Consumer inhalation exposure	1,3mg/m³	0,0107
PC9a: Aerosol spray can	 Consumer dermal exposure	0,02mg/kg bw/day	0,000541

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.

For further information on the assessment method, see: http://www.ecetoc.org/tra

For further information on the assessment method, 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



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4 61			
1. Short title of Exposure So Main User Groups		ngs of substances as such or in preparations at industrial	
PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exp 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 preparati and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) fro vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) fro vessels/ large containers at dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression extrusion, pelletisation			
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles		
2.1 Contributing scenario co	ontrolling environmental	exposure for: ERC4	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 100%	
	Regional use tonnage:	0,1	
Amount used	Fraction used at the main local source.	0,05	
	Annually total	60000 tonnes	
Frequency and duration of use	Continuous exposure	300 days/year	
Environment factors not	Dilution Factor (River)	10	
influenced by risk management	Dilution Factor (Coastal Areas)	100	
	Emission or Release Factor: Air	98 %	
Other given operational conditions affecting	Emission or Release Factor: Water	2 %	
environmental exposure	Emission or Release Factor: Soil	0 %	
	Indoor use.		
Technical conditions and measures at process level	Air	Use containment measures to reduce fugitive emissions. (Efficiency: > 80 %)	
(source) to prevent release Technical onsite conditions and		Treatment of air emissions is not required for the	



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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		purposes of REACH compliance but may be needed to comply with other environmental legislation, Use appropriate emission abatement equipment from LEV systems if required by local legislation., Use of technical measures such as catalytic or thermal oxidation to reduce emissions to air.		
	Water	Onsite wastewater treatment required, If discharging to domestic sewage treatment plant, no onsite wastewater treatment required., Do not release wastewater directly into environment.		
	Water	Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of (%): (Degradation effectiveness: 88 %)		
		event soil and water pollution in the event of spillage. harge consistent with regulatory requirements.		
	Type of Sewage Treatment Plant	Municipal sewage treatment plant		
Conditions and measures related	Flow rate of sewage treatment plant effluent	2.000 m3/d		
to sewage treatment plant	Percentage removed from waste water	87 %		
	Sludge Treatment	Disposal or recovery		
Conditions and managers related	Waste treatment	Treat all waste as hazardous waste		
Conditions and measures related to external treatment of waste for disposal	Disposal methods	Hazardous waste incineration., Dispose of waste of used sacks/containers according to local regulations. (Efficiency: 99,98 %)		
		re for: PROC1, PROC2, PROC3, PROC4, C10, PROC13, PROC14, PROC15		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	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.			
	General exposures	Handle substance within a closed system.(PROC1)		
Technical conditions and measures to control dispersion from source towards the worker	Bulk transfers Non-dedicated facility	Ensure material transfers are under containment or extract ventilation. Provide extract ventilation to points where emissions occur. Use drum pumps or carefully pour from container. Locate bulk storage outdoors.(PROC8a)		
	Bulk transfers Dedicated facility	Ensure material transfers are under containment or extract ventilation.		
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I		Dravide outreet ventilation to points where
		Provide extract ventilation to points where emissions occur. Clear transfer lines prior to de-coupling. Retain drain downs in sealed storage pending disposal or for subsequent recycle. Locate bulk storage outdoors.(PROC8b)
	Film formation - force drying (50-100 ℃). Stoving (>100 ℃). UV/EB radiation curing	Use ventilation to extract vapours from freshly coated articles/objects.(PROC2)
	Film formation - air drying	Use ventilation to extract vapours from freshly coated articles/objects.(PROC4)
	Provide extract ventilation t	to points where emissions occur.(PROC5)
		or extracted enclosure.(Automatic/robotic PROC7)
	Carry out in a vented booth or extracted enclosure.(Manual PROC7)	
	Provide extract ventilation to material transfer points and other openings.(PROC8a) Ensure material transfers are under containment or extract ventilation.(PROC8b)	
	Ensure material transfers a	
	Indoor.	Provide extract ventilation to points where emissions occur.(PROC10)
	Indoor.	Provide extract ventilation to points where emissions occur.(PROC13)
	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC14)	
Organisational measures to prevent /limit releases, dispersion and exposure	Bulk transfers Non-dedicated facility	If technical measures not practical: Avoid carrying out operation for more than 1 hour.(PROC8a)
	Bulk transfers Dedicated facility	If technical measures not practical: Avoid carrying out operation for more than 1 hour.(PROC8b)
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Butyl rubber gloves offer good protection	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear respiratory protection Wear face protection. Wear a full face respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily.(Manual PROC7)	
	with local exhaust ventilation	(Efficiency: 90 %)(PROC2, PROC5, PROC8a, PROC9, PROC13, PROC14)
	with local exhaust ventilation	(Efficiency: 95 %)(PROC7)
	with local exhaust ventilation	(Efficiency: 97 %)(PROC8b)

3. Exposure estimation and reference to its source



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Environment

ERC4: ECETOC TRA

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4		Fresh water sediment	PEC	0,718mg/kg dry weight (d.w.)	
ERC4		Marine water	PEC	0,012mg/L	
ERC4		Marine sediment	PEC	0,0719mg/kg dry weight (d.w.)	
ERC4	180 days	Soil	PEC	0,0413mg/kg dry weight (d.w.)	
ERC4	30 days	Soil	PEC	0,082mg/kg dry weight (d.w.)	
ERC4	180 days	Grassland	PEC	0,0435mg/kg dry weight (d.w.)	
ERC4	Annual average	Air	PEC	0,224mg/m ³	

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15: Used ECETOC TRA model.

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	General exposures (closed systems)	Inhalation worker exposure	0,01ppm	< 0,001
PROC1	General exposures (closed systems)	Dermal worker exposure	0,03mg/kg bw/day	< 0,001
PROC2	General exposures (closed systems), Use in contained systems, with sample collection	Inhalation worker exposure	25ppm	0,125
PROC2	General exposures (closed systems), Use in contained systems, with sample collection	Consumer dermal exposure	1,3mg/kg bw/day	0,022
PROC2	Film formation - force drying (50-100 °C). Stoving (>100 °C). UV/EB radiation curing	Inhalation worker exposure	12,5ppm	0,063
PROC2	Film formation - force drying (50-100 °C). Stoving (>100 °C). UV/EB	Dermal worker exposure	1,3mg/kg bw/day	0,022



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	radiation curing			
PROC3	Mixing operations (closed systems), General exposures	Inhalation worker exposure	50ppm	0,25
PROC3	Mixing operations (closed systems), General exposures	Dermal worker exposure	0,69mg/kg bw/day	0,011
PROC4	Film formation - air drying	Inhalation worker exposure	10ppm	0,05
PROC4	Film formation - air drying	Dermal worker exposure	6,8mg/kg bw/day	0,109
PROC5	Preparation of material for application, Mixing operations (open systems)	Inhalation worker exposure	25ppm	0,125
PROC5	Preparation of material for application, Mixing operations (open systems)	Dermal worker exposure	14mg/kg bw/day	0,218
PROC7	Spraying (automatic/robotic)	Inhalation worker exposure	25ppm	0,125
PROC7	Spraying (automatic/robotic)	Dermal worker exposure	43mg/kg bw/day	0,68
PROC7	Spraying	Inhalation worker exposure	25ppm	0,125
PROC7	Spraying	Dermal worker exposure	43mg/kg bw/day	0,68
PROC8a	Non-dedicated facility	Dermal worker exposure	14mg/kg bw/day	0,218
PROC8a	Non-dedicated facility	Inhalation worker exposure	25ppm	0,125
PROC8b	material transfers, Dedicated facility	Dermal worker exposure	14mg/kg bw/day	0,218
PROC8b	material transfers, Dedicated facility	Inhalation worker exposure	4,5ppm	0,023
PROC10	Roller, spreader, flow application	Dermal worker exposure	27mg/kg bw/day	0,435
PROC10	Roller, spreader, flow application	Inhalation worker exposure	25ppm	0,125
PROC13	Dipping, immersion and pouring	Dermal worker exposure	14mg/kg bw/day	0,218
PROC13	Dipping, immersion and pouring	Inhalation worker exposure	25ppm	0,125
PROC15	Laboratory activities	Dermal worker exposure	0,34mg/kg bw/day	0,005
PROC15	Laboratory activities	Inhalation worker exposure	50ppm	0,25
PROC9	material transfers, Drum/batch transfers, Transfer from/pouring from containers	Inhalation worker exposure	20ppm	0,1



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PROC9	material transfers, Drum/batch transfers, Transfer from/pouring from containers	Dermal worker exposure	6,8mg/kg bw/day	0,109
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation	Dermal worker exposure	3,4mg/kg bw/day	0,054
PROC14	Production of preparations or articles by tabletting, compression, extrusion, pelletisation	Inhalation worker exposure	25ppm	0,125

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

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Guidance is based on assumed operating conditions which may not be applicable to all sites. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

For further information on the assessment method, see: http://www.ecetoc.org/tra



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No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Distribution of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7846
2	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES13324
3	Polymer processing	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7684
4	Polymer processing	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7743
5	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 19	4	NA	ES7686
6	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 19	8a, 8d	NA	ES7745
7	Use in Cleaning Agents	21	NA	3, 4, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES8831
8	Use in laboratories	3	NA	NA	10, 15, 19	4	NA	ES7670
9	Use in laboratories	22	NA	NA	10, 15, 19	8a	NA	ES7735
10	Use in de-icing and anti-icing applications	22	NA	NA	1, 2, 8b, 11, 19	8d	NA	ES7751
11	Use in de-icing and anti-icing applications	21	NA	4	NA	8d	NA	ES8832
12	Use in oil and gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 8a, 8b	4	NA	ES7688
13	Use in oil and gas field drilling and production operations	22	NA	NA	1, 2, 3, 4, 8a, 8b	8d	NA	ES7747
14	Explosives manufacture & use	22	NA	NA	1, 3, 5, 8a, 8b	8d	NA	ES7753
15	Use as processing aid	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7845
16	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 19	4	NA	ES7672
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Use as binders and release agents	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13	5	NA	ES7678
Rubber production and processing	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14	6d	NA	ES7680
Polymer production	з	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7682
Use as blowing agents	3	NA	NA	1, 2, 3, 8b, 9, 12	4, 10a	NA	ES7690
Uses in coatings	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 19	8a, 8c, 8d, 8f	NA	ES7737
Use as binders and release agents	22	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11	8a, 8b, 8c, 8d, 8e, 8f	NA	ES7739
Polymer production	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7741
Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13, 19	8a, 8d	NA	ES7749
Uses in coatings	21	NA	1, 4, 9a, 9b, 9c, 15, 24, 31	NA	8a, 8c, 8d, 8f	NA	ES8830
	Rubber production and processing Polymer production Use as blowing agents Uses in coatings Use as binders and release agents Polymer production Use in agrochemicals	Rubber production and processing 3 Polymer production 3 Use as blowing agents 3 Uses in coatings 22 Use as binders and release agents 22 Polymer production 22 Use in agrochemicals 22	Rubber production and processing 3 NA Polymer production 3 NA Use as blowing agents 3 NA Uses in coatings 22 NA Use as binders and release agents 22 NA Polymer production 22 NA Use in agrochemicals 22 NA	Rubber production and processing 3 NA NA NA Polymer production 3 NA NA Use as blowing agents 3 NA NA Uses in coatings 22 NA NA Polymer production 22 NA NA Use in agrochemicals 22 NA NA Uses in coatings 21 NA NA Uses in coatings 22 NA NA NA NA NA NA NA NA NA NA	Use as binders and release agents 3 NA NA 5, 6, 7, 8a, 8b, 9, 10, 13 Rubber production and processing 3 NA NA NA 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14 Polymer production 3 NA NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15 Use as blowing agents 3 NA NA NA 1, 2, 3, 4, 5, 68a, 8b, 9, 10, 13, 14, 15 Uses in coatings 22 NA NA NA 1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 19 Use as binders and release agents 22 NA NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19 Polymer production 22 NA NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19 Use in agrochemicals 22 NA NA NA 1, 2, 8a, 8b, 9, 10, 11, 13, 19 Uses in coatings 21 NA NA NA 8a, 8b, 9, 14 Uses in coatings 21 NA NA NA NA	Use as binders and release agents 3 NA NA 5, 6, 7, 8a, 8b, 9, 10, 13 5 Rubber production and processing 3 NA NA NA 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14 6d Polymer production 3 NA NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15 6d Use as blowing agents 3 NA NA NA 1, 2, 3, 4, 5, 8a, 8b, 9, 12 4, 10a Use as blowing agents 3 NA NA NA 1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 19 8a, 8c, 8d, 8f Use as binders and release agents 22 NA NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19 8a, 8b, 9, 10, 11, 13, 15, 19 Polymer production 22 NA NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19 8a, 8b, 9, 10, 11, 13, 15, 19 Use in agrochemicals 22 NA NA NA 1, 2, 8a, 8b, 9, 10, 8d, 8f 8a, 8b, 9, 10, 11, 11, 13, 19 Uses in coatings 21 NA NA NA 1, 2, 4, 8a, 8b, 9, 14 8a, 8b, 9, 14 Uses in	Use as binders and release agents 3 NA NA 5, 6, 7, 8a, 8b, 9, 10, 13 5 NA Rubber production and processing 3 NA NA 1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14 6d NA Polymer production 3 NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15 6d NA Use as blowing agents 3 NA NA 1, 2, 3, 4, 5, 8a, 8b, 9, 10, 13, 14, 15 NA NA Uses in coatings 22 NA NA 1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 19 8a, 8c, 8d, 8d, 8f, 8c, 8d, 8b, 9, 10, 11, 13, 15, 19 NA Use as binders and release agents 22 NA NA 1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11, 13, 15, 19 8a, 8b, 8c, 8d, 8c, 8d, 8c, 8d, 8c, 8d, 8c, 8d, 8b, 9, 10, 11 NA 8a, 8b, 9, 10, 11 NA NA 1, 2, 3, 4, 8a, 8b, 9, 10, 11 8a, 8b, 9, 10, 11 NA NA 8a, 8b, 9, 10, 11 NA NA 8a, 8b, 9, 10, 8c, 8d, 8c, 8d, 8c, 8d, 8c, 8d, 8c, 8d, 8c, 8d, 8c, 9, 11 NA NA NA 1, 2, 8a, 8b, 9, 10, 11 NA NA NA NA 8a, 8b, 9, 10, 11 NA NA



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1. Short title of Exposure Sco					
Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industria			
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations 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) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent				
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of				
	intermediates)	ulting in manufacture of another substance (use of			
2.1 Contributing scenario co	intermediates)	exposure for: ERC1, ERC2, ERC4, ERC6a			
2.1 Contributing scenario co Substance is a unique structure, F	intermediates) Introlling environmental	<u> </u>			
	intermediates) Introlling environmental	<u> </u>			
Substance is a unique structure, F	intermediates) Introlling environmental Readily biodegradable.	<u> </u>			
Substance is a unique structure, F Amount used	intermediates) Introlling environmental Readily biodegradable. To be defined by site	exposure for: ERC1, ERC2, ERC4, ERC6a			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure	exposure for: ERC1, ERC2, ERC4, ERC6a			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.	exposure for: ERC1, ERC2, ERC4, ERC6a 360 days/year Treat air emission to provide a typical removal			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air	exposure for: ERC1, ERC2, ERC4, ERC6a 360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air	exposure for: ERC1, ERC2, ERC4, ERC6a 360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air	exposure for: ERC1, ERC2, ERC4, ERC6a 360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary acceptable.	exposure for: ERC1, ERC2, ERC4, ERC6a 360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers			
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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	intermediates) Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary ac estimates used.	a ste in accordance with environmental legislation and			



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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.			
from source towards the worker		Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation				

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15: ECETOC TRA

LOCIOO III/	<u> </u>			
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PA100058_001		15/98		EN



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PROC9	 Inhalation	200ppm	0,40
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



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Main User Groups	SU 3: Industrial uses: Use sites	es of substances as such or in preparations at industrial			
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations 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) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent				
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)				
2.1 Contributing scenario co	ontrolling environment	al exposure for: ERC1, ERC2, ERC4, ERC6a			
Substance is a unique structure, I	Beadily biodegradable	·			
Amount used	To be defined by site				
Frequency and duration of use	Continuous exposure	360 days/year			
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.				
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)			
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers			
measures to reduce or limit	Air	or, Charcoal adsorbers			
	Common practices vary across sites thus conservative process release estimates used.				
discharges, air emissions and releases to soil	estimates used.				
	estimates used.				
releases to soil Organizational measures to prevent/limit release from the		raste in accordance with environmental legislation and ions.			



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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, 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	> 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.			
from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)			
Conditions and measures related to personal protection, hygiene and health evaluation				

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

 $PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15: \\ ECETOC TRA$

Contributing	Specific conditions	Exposure routes	Level of Exposure	RCR
Scenario	Specific conditions	Exposure routes	Level of Exposure	non
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30



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PROC8b	 Dermal	6,86mg/kg/day	0,037
PROC9	 Inhalation	200ppm	0,40
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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.

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

Environment

For scaling see ECT Tool:

 $ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx$

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sc	enario 3: Polymer proc	essing		
Main User Groups	SU 3: Industrial uses: Use sites	es of substances as such or in preparations at industria		
Process categories	ocess, no likelihood of exposure ontinuous process with occasional controlled exposure atch process (synthesis or formulation) dother process (synthesis) where opportunity for any in batch processes for formulation of preparations ad/or significant contact) erations estance or preparation (charging/discharging) from/to at non-dedicated facilities estance or preparation (charging/discharging) from/to at dedicated facilities tance or preparation into small containers (dedicated ing) on or brushing ericles by dipping and pouring preparations or articles by tabletting, compression, or preparation of the process of the			
Environmental Release	PROC15: Use as laboratory reagent ERC6d: Industrial use of process regulators for polymerisation processes in			
Categories 2.1 Contributing scenario co	production of resins, rubben ntrolling environmenta	· ·		
Substance is a unique structure, F	Readily biodegradable.			
Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure	360 days/year		
Other given operational conditions affecting	Indoor/Outdoor use.			
environmental exposure				
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
Technical conditions and measures at process level (source) to prevent release	Air Air			
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and		efficiency of (%): (Efficiency: 90 %)		
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	Air Air	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers		
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	Air Air Common practices vary a	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers		
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 Conditions and measures related to external treatment of waste for	Air Air Common practices vary a estimates used.	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release aste in accordance with environmental legislation and		
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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related	Air Air Common practices vary a estimates used. Contain and dispose of w according to local regulat	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release aste in accordance with environmental legislation and		
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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario co	Air Air Common practices vary a estimates used. Contain and dispose of w according to local regulat If recycling is not practica	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release aste in accordance with environmental legislation and ions.		
	Air Air Common practices vary a estimates used. Contain and dispose of w according to local regulat If recycling is not practica	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release aste in accordance with environmental legislation and ions. ble, dispose of in compliance with local regulations. ure for: PROC1, PROC2, PROC3, PROC4,		



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	Substance in Mixture/Article	100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15; ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0,50
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC13		Dermal	13,71mg/kg/day	0,074
PA100058 001		21/98		EN



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PROC14, Dermal 0,34mg/kg/day 0,00						

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sco	enario 4. Polymer proces	esina	
-		Public domain (administration, education,	
Main User Groups	entertainment, services, cra		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of wa according to local regulation	ste in accordance with environmental legislation and ns.	
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC9, PROC14	ntrolling worker exposu	re for: PROC1, PROC2, PROC8a, PROC8b,	
Dundingt also weeks the	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
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	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Tashniag anditions and	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)
Technical conditions and measures to control dispersion	Ensure material transfers are under containment or extract ventilation.
from source towards the worker	or
nom source towards the worker	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Avoid carrying out operation for more than 4 hours.(PROC14)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC14: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC14		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	20ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC8a, PROC14	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a, PROC14	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8b, PROC9		Inhalation	250ppm	0,50
PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC14		Dermal	3,43mg/kg/day	0,02



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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.

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

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

Environment

For scaling see ECT Tool:

 $ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx$

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sce	enario 5: Use in Cleanin	g Agents	
Main User Groups	SU 3: Industrial uses: Use sites	s of substances as such or in preparations at industrial	
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	-	ocessing aids in processes and products, not becoming	
2.1 Contributing cooperie co	ntrolling environmental	Laura a a sur a faura EDO4	
2.1 Contributing scenario co Substance is a unique structure, F		exposure for: EHC4	
Substance is a unique structure, F		exposure for: ERC4	
Substance is a unique structure, F Amount used	Readily biodegradable.		
Substance is a unique structure, F	Readily biodegradable. To be defined by site	360 days/year	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	Readily biodegradable. To be defined by site Continuous exposure		
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.	360 days/year Treat air emission to provide a typical removal	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air	360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary as	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary are estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary are estimates used. Contain and dispose of wa according to local regulations.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary are estimates used. Contain and dispose of wa according to local regulation. If recycling is not practical introlling worker exposure.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons. Die, dispose of in compliance with local regulations. Jure for: PROC1, PROC2, PROC3, PROC4,	



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	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	windows etc. Controlled ve powered fan. Sample via a closed loop o Handle substance within a	r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3) re under containment or extract ventilation.
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant of employee training. If above technical/organisa following PPE:	,

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC8a, PROC10, PROC13, PROC19		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7		Dermal	2,14mg/kg/day	0,01
PA100058 001		27/98		FI



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PROC7		Inhalation	350ppm	0,70
PROC7	Outdoor use., 30% efficiency	Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC10		Dermal	27,43mg/kg/day	0,15
PROC13		Dermal	13,71mg/kg/day	0,074
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

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.

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

Environment

For scaling see ECT Tool:

 $\label{lem:consortium} ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx$

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sc	enario 6: Use in Cleanin	g Agents	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
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 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) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8a: Wide dispersive in	ndoor use of processing aids in open systems utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: FRC8a FRC8d	
	Poadily biodogradable	exposure for Errood, Errood	
Substance is a unique structure, F		exposure for. Errood, Errood	
Substance is a unique structure, F Amount used	To be defined by site	•	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure		360 days/year	
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level	To be defined by site Continuous exposure	•	
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and neasures at process level source) to prevent release	To be defined by site Continuous exposure Indoor/Outdoor use.	360 days/year Treat air emission to provide a typical removal	
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and	To be defined by site Continuous exposure Indoor/Outdoor use. Air	360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and eleases to soil	To be defined by site Continuous exposure Indoor/Outdoor use. Air Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers	
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related o external treatment of waste for	To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary ac estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting	To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary ac estimates used. Contain and dispose of wa according to local regulation	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release	
Substance is a unique structure, Famount used Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and eleases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary ac estimates used. Contain and dispose of wa according to local regulation. If recycling is not practicabentrolling worker exposure.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release stee in accordance with environmental legislation and ons. The for: PROC1, PROC2, PROC3, PROC4,	



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	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Ensure material transfers are under containment or extract ventilation. or		
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)		
Technical conditions and	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)		
measures to control dispersion	Ensure material transfers are under containment or extract ventilation.		
from source towards the worker	or Limit the substance content in the mixture to 25 %.(PROC10)		
	or Avoid carrying out operation	on for more than 4 hours.(PROC10)	
	Ensure material transfers a	re under containment or extract ventilation.	
	or Limit the substance conten	t in the mixture to 25 %	
	Ensure operation is undert		
	Avoid carrying out operation for more than 4 hours.(PROC11)		

Avoid carrying out operation for more than 1 hour.(PROC11) Avoid carrying out operation for more than 1 hour.(PROC19)

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

Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic'

employee training.

If above technical/organisational control measures are not feasible, then adopt

following PPE:
Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)

If above technical/organisational control measures are not feasible, then adopt following PPE:

Limit the substance content in the mixture to 25 %. Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
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PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3		Inhalation	100ppm	0,20
PROC4, PROC8b, PROC9, PROC13		Inhalation	250ppm	0,50
PROC4, PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5		Dermal	0,07mg/kg/day	0,00
PROC8b		Inhalation	350ppm	0,70
PROC5, PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC5	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC10		Dermal	1,37mg/kg/day	0,007
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16,46mg/kg/day	0,09
PROC10		Dermal	27,43mg/kg/day	0,15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC11		Inhalation	300ppm	0,60
PROC11	half mask	Inhalation	100ppm	0,20



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PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60

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.

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

Environment

For scaling see ECT Tool:

 $ECT: \ http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx \\$

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sco	enario 7: Use in Cleanin	g Agents	
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC3: Air care products PC4: Anti-freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC24: Lubricants, greases, release products PC35: Washing and cleaning products (including solvent based products) PC38: Welding and soldering products (with flux coatings or flux cores), flux products		
Environmental Release Categories		ndoor use of processing aids in open systems utdoor use of processing aids in open systems	
•	·	exposure for: ERC8a, ERC8d	
2.1 Contributing Sociatio Co	The online control of the control	exposure for: Erroba, Erroba	
Substance is a unique structure, F			
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co sprays)	ntrolling consumer expe	osure for: PC3: Aircare, instant action (aeroso	
Draduat abayaata vistiss	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	spray aerosol	
Amount used	Amount used per event	0,1 g	
	Exposure duration	0,25 h	
Frequency and duration of use	Frequency of use	365 days/year	
, , , , , , , , , , , , , , , , , , , ,	Frequency of use	4 Times per day	



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Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
2.4 Contributing scenario co (solid & liquid)	ntrolling consumer expo	osure for: PC3: Aircare, continuous action	
(Concentration of the Substance in Mixture/Article	Covers concentrations up to 1%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteristics	Vapour pressure	240 hPa	
	Physical Form (at time of use)	solid	
Amount used	Amount used per event	0,48 g	
7 Amount asca	Exposure duration	8 h	
Frequency and duration of use	Frequency of use	365 days/year	
Troquency and duration or doc	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,70 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.5 Contributing scenario co	L '	osure for: PC4: Washing car window	
-	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	0,5 g	
	Exposure duration	0,02 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.	
	ntrolling consumer expo	osure for: PC4: Pouring into radiator	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%	
	Physical Form (at time of	liquid	
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	use)		
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2000 g	
	Exposure duration	0,17 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm ²	
risk management			
Other given operational conditions affecting consumers	Room size	34 m3	
exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.	
2.7 Contributing scenario co	ntrolling consumer expo	osure for: PC4: Lock de-icer	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	4 g	
	Exposure duration	0,25 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 214,4 cm ²	
risk management Other given operational	Room size	34 m3	
conditions affecting consumers			
exposure	Covers use in a one car garage (34m³) under typical ventilation.		
2.8 Contributing scenario co	ntrolling consumer expo	osure for: PC9a: Waterborne latex wall paint	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1,5%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2760 g	
	Exposure duration	2,2 h	
Frequency and duration of use	Frequency of use	4 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428,75 cm ²	
risk management			
Other given operational conditions affecting consumers	Room size	20 m3	
-		ousehold ventilation., Covers use at ambient	
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exposure	temperatures.	
2.9 Contributing scenario co		osure for: PC9a: Solvent rich, high solid,
water borne paint		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
		T
Amount used	Amount used per event	744 g
	Exposure duration	2,2 h
Frequency and duration of use	Frequency of use	6 days/year
Human factors not influenced by	Frequency of use	1 Times per day
risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure		ousehold ventilation., Covers use at ambient
	temperatures.	exposure for: PC9a: Aerosol spray can
2.10 Contributing scenario	Concentration of the	Acrosor spray carr
Donato et ale con et aliabia	Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	spray aerosol
Amount used	Amount used ner event	215 a
Amount used	Amount used per event	215 g 0,33 min
Frequency and duration of use	Exposure duration Frequency of use	2 days/year
l requericy and duration of use	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm ²
risk management		Covere Grant Contact and up to Coop Gran
Other given operational conditions affecting consumers	Room size	34 m3
exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.
		exposure for: PC9a: Removers (paint-, glue-,
wall paper-, sealant-remo	over)	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	491 g



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	L Companyor discretion	امه		
Frequency and duration of use	Exposure duration Frequency of use	2 h 3 days/year		
requericy and duration of use	Frequency of use	1 Times per day		
Human factors not influenced by isk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	nousehold ventilation., Covers use at ambient		
2.12 Contributing scenari	•	exposure for: PC9b: Fillers and putty		
	Concentration of the			
	Substance in Mixture/Article	Covers concentrations up to 2%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	85 g		
	Exposure duration	4 h		
Frequency and duration of use	Frequency of use	12 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by isk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	nousehold ventilation., Covers use at ambient		
2.13 Contributing scenari equalizers	o controlling consumer	exposure for: PC9b: Plasters and floor		
·	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	13800 g		
	Exposure duration	2 h		
Frequency and duration of use	Frequency of use	12 days/year		
lumon footors and influence and	Frequency of use	1 Times per day		
Human factors not influenced by isk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	Covers use under typical household ventilation., Covers use at ambient temperatures.		

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Product characteristics	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%
Troduct characteristics	Physical Form (at time of use)	solid
Amount used	Amount used per event	1 g
	Exposure duration	8 h
Frequency and duration of use	Frequency of use	365 days/year
. ,	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 254,4 cm ²
risk management	Doom sine	000
Other given operational conditions affecting consumers	Room size	20 m3 nousehold ventilation., Covers use at ambient
exposure	temperatures.	louseriold verifilation., Covers use at ambient
2.15 Contributing scenario	controlling consumer e	exposure for: PC9c: Finger paints
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amountuood	Amount used nor event	1.05 0
Amount used	Amount used per event Exposure duration	1,35 g 8 h
Frequency and duration of use	Frequency of use	365 days/year
Trequency and daration of disc	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 254,4 cm ²
risk management		I aa a
Other given operational conditions affecting consumers	Room size	20 m3
exposure	temperatures.	nousehold ventilation., Covers use at ambient
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than 5%
	controlling consumer e	exposure for: PC24: Liquids
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 100%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2200 g

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	Exposure duration	0,17 h	
Frequency and duration of use	Frequency of use	4 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 468 cm ²		
Other given operational	Room size	34 m3	
conditions affecting consumers	Covers use in a one car garage (34m³) under typical ventilation.		
exposure 2.17 Contributing scenario		exposure for: PC24: Pastes	
2.17 Continuating Sociality	Concentration of the		
	Substance in Mixture/Article	Covers concentrations up to 20%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
		T	
Amount used	Amount used per event	34 g	
	Exposure duration	8 h	
Frequency and duration of use	Frequency of use	10 days/year	
Livers a factors and influenced by	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.18 Contributing scenario	controlling consumer e	exposure for: PC24: Sprays	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
	Physical Form (at time of use)	spray aerosol	
		T	
Amount used	Amount used per event	73 g	
Frequency and duration of use Human factors not influenced by	Exposure duration	0,17 h	
	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.19 Contributing scenario washing products	controlling consumer e	exposure for: PC35: Laundry and dish	
Product characteristics	Concentration of the Substance in	Covers percentage substance in the product up to 5 %.	
	·		



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	Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	15 g	
	Exposure duration	0,5 h	
Frequency and duration of use	Frequency of use	365 days/year	
•	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm ²	
risk management	1	'	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
		exposure for: PC35: Cleaners, liquids (all ers, glass cleaners, carpet cleaners, metal	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	27 g	
Amount used	Amount used per event Exposure duration	0,33 h	
Frequency and duration of use	Frequency of use	128 days/year	
requericy and duration of use	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm ²	
risk management	Exposed Skill aleas	Covers skill contact area up to 657,5 cm	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.21 Contributing scenario	controlling consumer e	exposure for: PC38	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%	
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
		•	
Amount used	Amount used per event	12 g	
	Exposure duration	1 h	
Frequency and duration of use	Frequency of use	365 days/year	

Frequency of use

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	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm ²
risk management		
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

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

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



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1. Short title of Exposure Sco	anario 8· Ilsa in laborato	oriae
1. Short title of Exposure Sci		
Main User Groups	sites	s of substances as such or in preparations at industrial
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available	
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4
Substance is a unique structure, F	Readily biodegradable.	
Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers
measures to reduce or limit	Air	or, Charcoal adsorbers
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.	
Organizational measures to prevent/limit release from the site		
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.	
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.	
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC10, PROC15, PROC19
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	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
3. Exposure estimation and	reference to its source	
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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

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Environment

No information available.

Workers

PROC10, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10, PROC19		Inhalation	250ppm	0,50
PROC10		Dermal	27,43mg/kg/day	0,15
PROC15		Inhalation	50ppm	0,10
PROC15		Dermal	0,34mg/kg/day	0,00
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



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Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 9: Use in laborato	ries	
Main User Groups	SU 22: Professional uses: Public domain (administration, education,		
	entertainment, services, craftsmen)		
	PROC10: Roller application or brushing		
Process categories	PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release	ERC8a: Wide dispersive indoor use of processing aids in open systems		
Categories	EnCoa. Wide dispersive indoor use of processing aids in open systems		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational	Indoor/Outdoor use.		
conditions affecting			
environmental exposure Technical conditions and			
measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release	Air	Closed system, or, Treated by scrubbers	
Technical onsite conditions and	Air	or, Charcoal adsorbers	
measures to reduce or limit discharges, air emissions and			
releases to soil	estimates used.	ross sites thus conservative process release	
Organizational measures to			
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for	Contain and dispose of was according to local regulatio	ste in accordance with environmental legislation and	
disposal	according to local regulatio	115.	
Conditions and measures related	If recycling is not practicable, dispose of in compliance with local regulations.		
to external recovery of waste	ntrolling worker evacu	TO FOUR DEPOSITE DEPOSITE	
2.2 Contributing Scenario Co		re for: PROC10, PROC15, PROC19	
	Concentration of the Substance in	Covers percentage substance in the product up to	
	Mixture/Article	100 % (unless stated differently).	
Product characteristics	Physical Form (at time of	liquid	
	use)	iiquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use		to 8 hours (unless stated differently).	
	Locate bulk storage outdoors.		
Technical conditions and	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a		
	powered fan.		
	Ensure material transfers are under containment or extract ventilation.		
measures to control dispersion from source towards the worker	or		
	Limit the substance content in the mixture to 25 %.(PROC10)		
	or Avoid carrying out operation for more than 4 hours.(PROC10)		
	Avoid carrying out operation for more than 1 hour.(PROC19)		
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Use suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

If above technical/organisational control measures are not feasible, then adopt following PPE:
Limit the substance content in the mixture to 25 %.

Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC10, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC10		Dermal	1,37mg/kg/day	0,007
PROC15		Inhalation	50ppm	0,10
PROC15		Dermal	0,34mg/kg/day	0,002
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

PA100058_001 45/98 EN



SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 acetone Print Date 09.05.2016 Version 2.0 Revision date / valid from 09.05.2016 Assumes a good basic standard of occupational hygiene is implemented.



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Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 10: Use in de-icin	g and anti-icing applications	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8d: Wide dispersive ou	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	leadily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting	Indoor/Outdoor use.		
environmental exposure			
Fechnical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
neasures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of was according to local regulation	ste in accordance with environmental legislation and ns.	
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
	ntrolling worker exposu	re for: PROC1, PROC2, PROC8b, PROC11,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
requency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
13 30dioo towaldo tilo worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)		
	Hariaic Substance Within a	Gleece System: (111661; 111662)	



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	Ensure material transfers are under containment or extract ventilation.
	or
	Limit the substance content in the mixture to 25 %.
	Ensure operation is undertaken outdoors.
	Avoid carrying out operation for more than 4 hours.(PROC11)
	or
	Avoid carrying out operation for more than 1 hour.(PROC11)
	Avoid carrying out operation for more than 1 hour.(PROC19)
	Use suitable eye protection.
	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
	employee training.
Conditions and measures related	If above technical/organisational control measures are not feasible, then adopt
to personal protection, hygiene	following PPE:
and health evaluation	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
and nearin evaluation	If above technical/organisational control measures are not feasible, then adopt
	following PPE:
	Limit the substance content in the mixture to 25 %.
	Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC8b, PROC11, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,10
PROC8b		Inhalation	250ppm	0,50
PROC8b		Dermal	6,86mg/kg/day	0,04
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35



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PROC11		Dermal	107,14mg/kg/day	0,58
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



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•		ig and anti-icing applications	
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC4: Anti-freeze and de-io	· ·	
Environmental Release Categories	ERC8a: Wide dispersive o	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
2.2 Contributing scenario co	ntrolling consumer exp	osure for: PC4: Washing car window	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	0,5 g	
	Exposure duration	0,02 h	
Frequency and duration of use	Frequency of use	365 days/year	
, 1 1, 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
Other given operational conditions affecting consumers	Room size	34 m3	
exposure	-	arage (34m³) under typical ventilation.	
		osure for: PC4: Pouring into radiator	
Product characteristics	Concentration of the	Covers concentrations up to 10%	



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	Substance in Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2000 g	
	Exposure duration	0,17 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm ²	
risk management			
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.		

2.4 Contributing scenario controlling consumer exposure for: PC4: Lock de-icer

3				
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	4 g		
	Exposure duration	0,25 h		
Frequency and duration of use	Frequency of use	365 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 214,4 cm ²		
risk management				
Other given operational	Room size	34 m3		
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.			

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

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

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



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Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	enario 12: Use in oil and	gas field drilling and production operations	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
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		
Environmental Release Categories	ERC4: Industrial use of propart of articles	cessing aids in processes and products, not becoming	
2.1 Contributing scenario co		exposure for: ERC4	
Substance is a unique structure, F	Readily biodegradable		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and		
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a		
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	powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b: ECETOC TRA

- , -	, , = = , = =	,		
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4		Dermal	6,86mg/kg/day	0,04
PROC8a		Inhalation	250ppm	0,50
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

-lealth

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



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Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sce	enario 13: Use in oil and	gas field drilling and production operations	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
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		
Environmental Release Categories	ERC8d: Wide dispersive or	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Common practices vary across sites thus conservative process release estimates used.		
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and		
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,	
B. J.	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a		
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	powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3		Inhalation	100ppm	0,20
PROC4, PROC8b		Inhalation	250ppm	0,50
PROC4, PROC8b		Dermal	6,86mg/kg/day	0,04
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ррт	0,20

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.

Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are



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within the boundaries set by the ES

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx	
Health For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)	
Additional good practice advice beyond the REACH Chemical Safety Assessment	
Assumes a good basic standard of occupational hygiene is implemented.	_



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Version 2.0 Print Date 09.05.2016

1. Short title of Exposure Sco	enario 14: Explosives ma	anufacture & use	
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) 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		
Environmental Release Categories	ERC8d: Wide dispersive or	utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.		
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC8b	ntrolling worker exposu	re for: PROC1, PROC3, PROC5, PROC8a,	
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	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
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	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC3)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)
ated	Use suitable eye protection.
ne	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
	employee training

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

employee training

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC3, PROC5, PROC8a: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC3, PROC5		Inhalation	100ppm	0,20
PROC5		Dermal	0,07mg/kg/day	0,00
PROC5		Inhalation	350ppm	0,70
PROC5		Dermal	13,71mg/kg/day	0,07
PROC5		Inhalation	300ppm	0,60
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60

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.

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

Environment

For scaling see ECT Tool:



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ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx Health For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)					
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 15: Use as processing aid				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations 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) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent			
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becomin part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)			

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC4, ERC6a

Substance is a unique structure, Readily biodegradable.

Amount used To be defined by site

Frequency and duration of use Continuous exposure

Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit discharges, air emissions and releases to soil	Air	or, Charcoal adsorbers	
	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	ouritain and diopose of Maste in accordance man crimenian legiciation an		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
1			



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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, 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	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

 $PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15: \\ ECETOC TRA$

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
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PROC9	 Inhalation	200ppm	0,40
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

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Main Haar Crausa				
Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industrial		
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available			
Environmental Release Categories		ocessing aids in processes and products, not becoming		
2.1 Contributing scenario co		exposure for: ERC4		
Substance is a unique structure, F	1			
Amount used	To be defined by site	T		
Frequency and duration of use	Continuous exposure	360 days/year		
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release	Air	Charcoal adsorbers, or, Treated by scrubbers		
Lecunical Obsite conditions and	•			
Technical onsite conditions and measures to reduce or limit	Air	or, Charcoal adsorbers		
measures to reduce or limit discharges, air emissions and releases to soil		or, Charcoal adsorbers ross sites thus conservative process release		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Common practices vary ac			
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal	Common practices vary ac estimates used.	ross sites thus conservative process release ste in accordance with environmental legislation and		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for	Common practices vary ac estimates used. Contain and dispose of wa according to local regulation	ross sites thus conservative process release ste in accordance with environmental legislation and		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario co	Common practices vary acceptimates used. Contain and dispose of wa according to local regulation. If recycling is not practicab.	ross sites thus conservative process release ste in accordance with environmental legislation and ons.		
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario co	Common practices vary acceptimates used. Contain and dispose of wa according to local regulation. If recycling is not practicab.	ross sites thus conservative process release ste in accordance with environmental legislation and ins. le, dispose of in compliance with local regulations. re for: PROC1, PROC2, PROC3, PROC4,		



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	Mixture/Article				
	Physical Form (at time of use)	liquid			
	Vapour pressure	> 10 kPa			
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).			
Technical conditions and	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.				
measures to control dispersion from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)				
	Ensure material transfers are under containment or extract ventilation. or Ensure operation is undertaken outdoors.(PROC7)				
Conditions and measures related to personal protection, hygiene and health evaluation	employee training. If above technical/organisa following PPE:	gloves (tested to EN374) in combination with 'basic' tional control measures are not feasible, then adopt			
	Wear a respirator conformi	ng to EN140 with Type A filter or better.(PROC7)			

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC8a, PROC10, PROC13, PROC19		Inhalation	250ppm	0,50
PROC5, PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC7	with local exhaust	Inhalation	25ppm	0,05



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	ventilation, (95% efficiency)			
PROC7		Dermal	2,14mg/kg/day	0,01
PROC7	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC7		Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC10		Dermal	27,43mg/kg/day	0,15
PROC15		Dermal	0,34mg/kg/day	0,00
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.



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	enario 17: Use as binde	rs and release agents		
Main User Groups	SU 3: Industrial uses: Use sites	es of substances as such or in preparations at industria		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposur PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring			
Environmental Release Categories		Iting in inclusion into or onto a matrix		
Amount used Frequency and duration of use	To be defined by site Continuous exposure	360 days/year		
Other given operational	Indoor/Outdoor use.			
conditions affecting environmental exposure	indoor/Outdoor use.			
conditions affecting environmental exposure Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	Air Air	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers		
Other given operational conditions affecting environmental exposure 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	Air Air Air	efficiency of (%): (Efficiency: 90 %)		
conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for	Air Air Common practices vary a estimates used.	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and		
conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	Air Air Common practices vary a estimates used. Contain and dispose of waccording to local regulati If recycling is not practical	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons. ole, dispose of in compliance with local regulations.		
conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste	Air Air Common practices vary a estimates used. Contain and dispose of waccording to local regulati If recycling is not practical	efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release aste in accordance with environmental legislation and ons. Die, dispose of in compliance with local regulations. ure for: PROC1, PROC2, PROC3, PROC4,		



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	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	windows etc. Controlled ve powered fan. Sample via a closed loop o Handle substance within a	r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3) re under containment or extract ventilation.	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant of employee training. If above technical/organisa following PPE:	,	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a		Inhalation	250ppm	0,50
PROC5		Dermal	13,71mg/kg/day	0,07
PROC6		Dermal	27,43mg/kg/day	0,15
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7		Dermal	2,14mg/kg/day	0,01
PROC7		Inhalation	350ppm	0,70
PROC7		Dermal	42,86mg/kg/day	0,23



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PROC7	half mask	Inhalation	50ppm	0,10
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC10		Inhalation	250ppm	0,50
PROC10		Dermal	27,34mg/kg/day	0,15
PROC13		Inhalation	250ppm	0,50
PROC13		Dermal	13,71mg/kg/day	0,074

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sco	enario 18: Rubber proc	uction and processing		
Main User Groups	SU 3: Industrial uses: Us sites	es of substances as such or in preparations at industria		
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation			
Environmental Release Categories	· · · · · · · · · · · · · · · · · · ·	process regulators for polymerisation processes in		
Substance is a unique structure, F		Il exposure for: ERC6a, ERC6b, ERC6c, ERC6c		
Amount used	To be defined by site			
	To be defined by site	260 daye/yoar		
Frequency and duration of use Other given operational conditions affecting	To be defined by site Continuous exposure Indoor/Outdoor use.	360 days/year		
Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	Continuous exposure	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
Prequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level (source) to prevent release	Continuous exposure Indoor/Outdoor use.	Treat air emission to provide a typical removal		
Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level source) to prevent release Fechnical onsite conditions and	Continuous exposure Indoor/Outdoor use. Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
Frequency and duration of use Other given operational conditions affecting environmental exposure 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	Continuous exposure Indoor/Outdoor use. Air Air Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers		
Frequency and duration of use Other given operational conditions affecting environmental exposure Fechnical conditions and measures at process level (source) to prevent release Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary a	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers		
Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for	Continuous exposure Indoor/Outdoor use. Air Air Common practices vary a estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release		
Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related	Continuous exposure Indoor/Outdoor use. Air Air Common practices vary a estimates used. Contain and dispose of waccording to local regular	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release		
Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario co	Continuous exposure Indoor/Outdoor use. Air Air Common practices vary a estimates used. Contain and dispose of waccording to local regulation. If recycling is not practical entrolling worker exposure.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release raste in accordance with environmental legislation and ions.		
	Continuous exposure Indoor/Outdoor use. Air Air Common practices vary a estimates used. Contain and dispose of waccording to local regulation. If recycling is not practical entrolling worker exposure.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers across sites thus conservative process release raste in accordance with environmental legislation and ions. ble, dispose of in compliance with local regulations. ure for: PROC1, PROC2, PROC3, PROC4,		



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	Substance in Mixture/Article	100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
Technical conditions and	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
measures to control dispersion from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Ensure material transfers are under containment or extract ventilation. or Ensure operation is undertaken outdoors.(PROC7)		
Conditions and measures related to personal protection, hygiene	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		
and health evaluation	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR		
PROC1		Inhalation	0,01ppm	0,00002		
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002		
PROC2, PROC14		Inhalation	50ppm	0,10		
PROC2		Dermal	1,37mg/kg/day	0,01		
PROC3, PROC4		Inhalation	100ppm	0,20		
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04		
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0,50		
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07		
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15		
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PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7		Dermal	2,14mg/kg/day	0,01
PROC7	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC7		Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC13		Dermal	13,71mg/kg/day	0,074
PROC14		Dermal	0,34mg/kg/day	0,00

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sce	enano 19: Polymer prod	iuction
Main User Groups	SU 3: Industrial uses: Use sites	s of substances as such or in preparations at industria
Process categories	PROC2: Use in closed, co PROC3: Use in closed bat PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage and PROC6: Calendering oper PROC8a: Transfer of subst vessels/large containers at PROC9: Transfer of subst filling line, including weighi PROC10: Roller application PROC13: Treatment of articles	rations stance or preparation (charging/discharging) from/to a non-dedicated facilities stance or preparation (charging/discharging) from/to a dedicated facilities stance or preparation into small containers (dedicated ang) on or brushing ticles by dipping and pouring reparations or articles by tabletting, compression,
Environmental Release	ERC6d: Industrial use of p	process regulators for polymerisation processes in
Categories	production of resins, rubbe	
Categories 2.1 Contributing scenario co	production of resins, rubbe	ers, polymers
-	production of resins, rubbe ntrolling environmental	ers, polymers
2.1 Contributing scenario co Substance is a unique structure, F	production of resins, rubbe ntrolling environmental	ers, polymers
2.1 Contributing scenario co Substance is a unique structure, F Amount used	production of resins, rubbe ntrolling environmental Readily biodegradable.	ers, polymers
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting	ntrolling environmental Readily biodegradable. To be defined by site	ers, polymers l exposure for: ERC6d
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure	exposure for: ERC6d
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release	production of resins, rubbe Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.	exposure for: ERC6d 360 days/year Treat air emission to provide a typical removal
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	production of resins, rubbe Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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	production of resins, rubbe Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal	production of resins, rubbe Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary ac estimates used.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related	production of resins, rubbe Introlling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary acceptimates used. Contain and dispose of was according to local regulation.	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use Other given operational conditions affecting environmental exposure 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 Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario co	production of resins, rubbe ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary acceptimates used. Contain and dispose of wat according to local regulation If recycling is not practicate ntrolling worker exposure	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers cross sites thus conservative process release



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	Substance in Mixture/Article	100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker		ors. f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a
nom source towards the worker		r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant of employee training.	n. gloves (tested to EN374) in combination with 'basic'

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15; ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2, PROC14, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC4		Inhalation	100ppm	0,20
PROC4, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0,50
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		Dermal	27,43mg/kg/day	0,15
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC13		Dermal	13,71mg/kg/day	0,074
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PROC14, PROC15		Dermal	0,34mg/kg/day	0,00

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sco	enario 20: Use as blowin	ng agents
Main User Groups	SU 3: Industrial uses: Uses sites	s of substances as such or in preparations at industrial
Process categories	PROC2: Use in closed, cor PROC3: Use in closed bate PROC8b: Transfer of subsi vessels/large containers at PROC9: Transfer of substa filling line, including weighir	ance or preparation into small containers (dedicated
Environmental Release Categories	part of articles	ocessing aids in processes and products, not becoming butdoor use of long-life articles and materials with low
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4, ERC10a
Substance is a unique structure, F	Readily biodegradable.	
Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers
measures to reduce or limit	Air	or, Charcoal adsorbers
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	ross sites thus conservative process release
Organizational measures to prevent/limit release from the site		
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of wa according to local regulation	ste in accordance with environmental legislation and ns.
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.
2.2 Contributing scenario co PROC9, PROC12	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC8b,
Donale et alea et al	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use		to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion	Locate bulk storage outdoo Provide a good standard of	ors. f general ventilation. Natural ventilation is from doors,
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from source towards the worker	windows etc. Controlled ventilation means air is supplied or removed by a
	powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC8b, PROC9, PROC12: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC12		Inhalation	100ppm	0,20
PROC8b		Inhalation	150ppm	0,30
PROC8b		Dermal	6,86mg/kg/day	0,037
PROC9		Inhalation	200ppm	0,40
PROC9		Dermal	6,86mg/kg/day	0,04
PROC12		Dermal	0,34mg/kg/day	0,00

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivativesreachconsortium/phenol-derivatives-dossiers.aspx

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

(http://cefic.org/templates/shwPublications.asp?HID=750)

Additional good practice advice beyond the REACH Chemical Safety Assessment

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SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006 acetone Print Date 09.05.2016 Version 2.0 Revision date / valid from 09.05.2016 Assumes a good basic standard of occupational hygiene is implemented.



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1. Short title of Exposure Sce	enario 21: Uses in coatii	ngs
Main User Groups		Public domain (administration, education,
Process categories	PROC2: Use in closed, co PROC3: Use in closed bat PROC4: Use in batch and exposure arises PROC5: Mixing or blending and articles (multistage and PROC8a: Transfer of subsvessels/large containers at PROC8b: Transfer of subsvessels/large containers at PROC9: Transfer of substafilling line, including weighin PROC10: Roller applicatio PROC11: Non industrial spracc13: Treatment of art PROC15: Use as laborator	stance or preparation (charging/discharging) from/to non-dedicated facilities stance or preparation (charging/discharging) from/to dedicated facilities ance or preparation into small containers (dedicated ng) n or brushing braying icles by dipping and pouring
Environmental Release Categories	ERC8c: Wide dispersive in ERC8d: Wide dispersive o	ndoor use of processing aids in open systems ndoor use resulting in inclusion into or onto a matrix utdoor use of processing aids in open systems utdoor use resulting in inclusion into or onto a matrix
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC6d, ERC8f
Substance is a unique structure, F	Readily biodegradable.	
Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
(source) to prevent release	Air	Closed system, or, Treated by scrubbers
Technical onsite conditions and measures to reduce or limit	Air	or, Charcoal adsorbers
discharges, air emissions and releases to soil		cross sites thus conservative process release
Organizational measures to		
prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal	Contain and dispose of wa according to local regulation	iste in accordance with environmental legislation and ons.
Conditions and measures related to external recovery of waste	If recycling is not practicab	ole, dispose of in compliance with local regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19



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	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).	
	windows etc. Controlled ve powered fan.	f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a	
		r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3)	
		re under containment or extract ventilation.	
	or		
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)		
	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)		
Technical conditions and measures to control dispersion	Ensure material transfers are under containment or extract ventilation.		
from source towards the worker	or Limit the substance content in the mixture to 25 %.(PROC10)		
	or	((
	Avoid carrying out operation for more than 4 hours.(PROC10)		
	Ensure material transfers are under containment or extract ventilation.		
	or Limit the substance content in the mixture to 25 %.		
	Ensure operation is undertaken outdoors.		
	Avoid carrying out operation for more than 4 hours.(PROC11)		
	or		
		n for more than 1 hour.(PROC11)	
		n for more than 1 hour.(PROC19)	
	Use suitable eye protection Wear chemically resistant of employee training.	n. gloves (tested to EN374) in combination with 'basic'	
Conditions and measures related to personal protection, hygiene	If above technical/organicational control measures are not feasible, then adopt		
and health evaluation	Wear a respirator conformi	ng to EN140 with Type A filter or better.(PROC11)	
	If above technical/organisational control measures are not feasible, then adopt		
	following PPE: Limit the substance content in the mixture to 25 %.		
	Wear suitable gloves tested		
	The contact ground toolor		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19: ECETOC TRA



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Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3, PROC15		Dermal	0,34mg/kg/day	0,002
PROC2, PROC15		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3		Inhalation	100ppm	0,20
PROC4, PROC8b, PROC9, PROC13		Inhalation	250ppm	0,50
PROC4, PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC5		Dermal	0,07mg/kg/day	0,00
PROC5, PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC5, PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC10		Dermal	1,37mg/kg/day	0,007
PROC11	with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC11	half mask	Inhalation	100ppm	0,20



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PROC19 Concentration of substance in product: 5% Inhalation 300ppm 0,60

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 22: Use as binders and release agents				
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)			
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC6: Calendering operations 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) PROC10: Roller application or brushing PROC11: Non industrial spraying			
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix			

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f

Substance is a unique structure, Readily biodegradable.				
Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure 360 days/year			
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers		
measures to reduce or limit	Air	or, Charcoal adsorbers		
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.			
Organizational measures to prevent/limit release from the site				
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.			
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.			
2.2 Contributing scenario controlling worker exposure for: PROC1_PROC2_PROC3_PROC4				

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



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PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11					
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	> 10 kPa			
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).			
	windows etc. Controlled ve powered fan.	rs. general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a r other system to avoid exposure.			
		closed system (PROC1, PROC2, PROC3)			
		re under containment or extract ventilation.			
	or				
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)				
	Or				
	Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a) Ensure operation is undertaken outdoors.				
Technical conditions and	or				
measures to control dispersion	Avoid carrying out operation for more than 4 hours.(PROC6)				
from source towards the worker	Ensure material transfers are under containment or extract ventilation.				
	or				
	Limit the substance content in the mixture to 25 %.(PROC10)				
	Or Avoid carrying out operation	n for more than 4 hours (PROC10)			
	Avoid carrying out operation for more than 4 hours.(PROC10) Ensure material transfers are under containment or extract ventilation.				
	or				
	Limit the substance content in the mixture to 25 %.				
	Ensure operation is undertaken outdoors.				
	Avoid carrying out operatio	n for more than 4 hours.(PROC11)			
	or Avoid carrying out operation for more than 1 hour.(PROC11)				
Conditions and measures related to personal protection, hygiene	employee training.	gloves (tested to EN374) in combination with 'basic'			
and health evaluation	If above technical/organisational control measures are not feasible, then adopt following PPE:				
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)				

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11: ECETOC TRA

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Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC3, PROC8b		Inhalation	100ppm	0,20
PROC4		Inhalation	250ppm	0,50
PROC4		Dermal	6,86mg/kg/day	0,04
PROC5		Dermal	0,07mg/kg/day	0,00
PROC5, PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC6	Outdoor use., 30% efficiency	Inhalation	420ppm	0,84
PROC6		Dermal	27,43mg/kg/day	0,15
PROC6	during 1 - 4 hours	Inhalation	360ppm	0,72
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a		Dermal	13,71mg/kg/day	0,50
PROC8b		Inhalation	250ppm	0,50
PROC8b		Dermal	6,86mg/kg/day	0,04
PROC9		Inhalation	250ppm	0,50
PROC9		Dermal	6,86mg/kg/day	0,04
PROC11	half mask	Inhalation	100ppm	0,20
PROC10		Dermal	1,37mg/kg/day	0,007
PROC10	during 1 - 4 hours, Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16,46mg/kg/day	0,09
PROC10		Dermal	27,43mg/kg/day	0,15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5%	Inhalation	252ppm	0,50
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	- 25%, Outdoor use., 30% efficiency			
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC5, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sco	nario 23: Polymer prod	uction	
•		Public domain (administration, education,	
Main User Groups	entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
Environmental Release Categories	ERC8c: Wide dispersive in ERC8d: Wide dispersive or	door use of processing aids in open systems door use resulting in inclusion into or onto a matrix utdoor use of processing aids in open systems atdoor use resulting in inclusion into or onto a matrix	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC8d, ERC8f	
Substance is a unique structure, F			
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to			
prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and		
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC9, PROC14	ntrolling worker exposu	re for: PROC1, PROC2, PROC8a, PROC8b,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		



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	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
Technical conditions and	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)
measures to control dispersion	Ensure material transfers are under containment or extract ventilation.
from source towards the worker	or
moni socioc towardo trie worker	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Avoid carrying out operation for more than 4 hours.(PROC14)
Conditions and measures related	Use suitable eye protection.
to personal protection, hygiene	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
and health evaluation	employee training.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC14: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1, PROC14		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC8a, PROC14	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a		Dermal	13,71mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8b, PROC9		Inhalation	250ppm	0,50
PROC8b, PROC9		Dermal	6,86mg/kg/day	0,04
PROC14	during 1 - 4 hours	Inhalation	300ppm	0,002

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



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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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sce	enario 24: Use in agroch	emicals	
Main User Groups	SU 22: Professional uses: entertainment, services, cra	Public domain (administration, education, uftsmen)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure 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 PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8a: Wide dispersive in ERC8d: Wide dispersive or	door use of processing aids in open systems utdoor use of processing aids in open systems	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8d	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	ross sites thus conservative process release	
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
2.2 Contributing scenario co PROC8b, PROC11, PROC		re for: PROC1, PROC2, PROC4, PROC8a,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure > 10 kPa		
Frequency and duration of use		to 8 hours (unless stated differently).	
Technical conditions and	Locate bulk storage outdoo	ors.	



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measures to control dispersion from source towards the worker	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Limit the substance content in the mixture to 25 %.
	Ensure operation is undertaken outdoors.
	Avoid carrying out operation for more than 4 hours.(PROC11)
	or
	Avoid carrying out operation for more than 1 hour.(PROC11)
	Avoid carrying out operation for more than 1 hour.(PROC19)
	Use suitable eye protection.
	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
	employee training.
Conditions and measures related	If above technical/organisational control measures are not feasible, then adopt
	following PPE:
to personal protection, hygiene	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
and health evaluation	If above technical/organisational control measures are not feasible, then adopt
	following PPE:
	Limit the substance content in the mixture to 25 %.

Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13, PROC19: ECETOC TRA

111001, 111001, 111001a, 111000a, 1110011, 1110010, 1110010. 202100 1111				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0,01ppm	0,00002
PROC1		Dermal	0,34mg/kg/day	0,002
PROC2		Inhalation	50ppm	0,10
PROC2		Dermal	1,37mg/kg/day	0,01
PROC4, PROC8b, PROC13		Inhalation	250ppm	0,50
PROC4, PROC8b		Dermal	6,86mg/kg/day	0,04
PROC8a	with local exhaust ventilation, 80%	Inhalation	100ppm	0,20

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	efficiency		1	I
PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC8a, PROC13		Dermal	13,71mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11		Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11		Dermal	107,14mg/kg/day	0,58
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%	Dermal	16,97mg/kg/day	0,09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60

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.

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

Environment

For scaling see ECT Tool:

ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx

Health

For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)

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 Sce	enario 25: Uses in coatir	ngs	
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC1: Adhesives, sealants PC4: Anti-freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC15: Non-metal-surface treatment products PC24: Lubricants, greases, release products PC31: Polishes and wax blends		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC8d, ERC8f	
Substance is a unique structure, F	Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
2.2 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glues, hobby use	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	9 g	
	Exposure duration	< 4 h	
Frequency and duration of use	Frequency of use	< 365 days/year	

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	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 35,73 cm ²	
risk management	Exposed Skill aleas	Covers skin contact area up to 35,75 cm	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical has temperatures.	nousehold ventilation., Covers use at ambient	
2.3 Contributing scenario co tile glue, wood parquet g		osure for: PC1: Glues DIY-use (carpet glue,	
, , ,	Concentration of the		
	Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	6390 g	
	Exposure duration	6 h	
Frequency and duration of use	Frequency of use	1 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.4 Contributing scenario co	ntrolling consumer exp	osure for: PC1: Glue from spray	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	spray aerosol	
Amount used	Amount used per event	85,05 g	
	Exposure duration	4 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	nousehold ventilation., Covers use at ambient	
2.5 Contributing scenario co	ntrolling consumer exp	osure for: PC4: Washing car window	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 1 %.	

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	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	0,5 g
	Exposure duration	0,02 h
Frequency and duration of use	Frequency of use	365 days/year
, ,	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm ²
risk management		
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.
2.6 Contributing scenario co	ntrolling consumer expe	osure for: PC4: Pouring into radiator
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2000 g
	Exposure duration	0,17 h
Frequency and duration of use	Frequency of use	365 days/year
,	Frequency of use	1 Times per day
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm ²
risk management	'	
Other given operational conditions affecting consumers	Room size	34 m3
exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.
2.7 Contributing scenario co	ntrolling consumer expe	osure for: PC4: Lock de-icer
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amountuged	Amount upod resessed	140
Amount used	Amount used per event	4 g
Francisco and design of	Exposure duration	0,25 h
Frequency and duration of use	Frequency of use	365 days/year
Human factors not influenced by	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 214,4 cm ²
Other given operational	Room size	34 m3

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conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.			
2.8 Contributing scenario co	ntrolling consumer expo	osure for: PC9a: Waterborne latex wall paint		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1,5%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	2760 g		
	Exposure duration	2,2 h		
Frequency and duration of use	Frequency of use	4 days/year		
Human factors not influenced by	Frequency of use	1 Times per day		
risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical had temperatures.	ousehold ventilation., Covers use at ambient		
2.9 Contributing scenario co water borne paint, PC15:		osure for: PC9a: Solvent rich, high solid, water borne paint		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	744 g		
	Exposure duration	2,2 h		
Frequency and duration of use	Frequency of use	6 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 482,75 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical he temperatures.	ousehold ventilation., Covers use at ambient		
	controlling consumer e	xposure for: PC9a: Aerosol spray can, PC15:		
Aerosol spray can				
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
	Physical Form (at time of use)	spray aerosol		
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Amount used	Amount used per event	215 g	
	Exposure duration	0,33 h	
Frequency and duration of use	Frequency of use	2 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
risk management			
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.		

2.11 Contributing scenario controlling consumer exposure for: PC9a: Removers (paint-, glue-, wall paper-, sealant-remover), PC15: Removers (paint-, glue-, wall paper-, sealant remover)

	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	491 g	
	Exposure duration	2 h	
Frequency and duration of use	Frequency of use	3 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		

2.12 Contributing scenario controlling consumer exposure for: PC9b: Fillers and putty

Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
Physical Form (at time of use)	liquid
Vapour pressure	240 hPa
Amount used per event	85 g
Exposure duration	4 h
Frequency of use	12 days/year
Frequency of use	1 Times per day
Exposed skin areas	Covers skin contact area up to 35,73 cm ²
Room size	20 m3
Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Exposure duration Frequency of use Frequency of use Exposed skin areas Room size Covers use under typical h



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2.13 Contributing scenario controlling consumer exposure for: PC9b: Plasters and floor equalizers				
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	13800 g		
	Exposure duration	2 h		
Frequency and duration of use	Frequency of use	12 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient		
2.14 Contributing scenario	•	exposure for: PC9c: Finger paints		
_	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	240 hPa		
Amount used	Amount used per event	1,35 g		
	Frequency of use	365 days/year		
Frequency and duration of use	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 254,4 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than 5%		
2.15 Contributing scenario controlling consumer exposure for: PC24: Sprays				
Due di est els aucets de la	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
Product characteristics	Physical Form (at time of use)	spray aerosol		
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Amount used	Amount used per event	73 g	
	Exposure duration	0,17 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428,75 cm ²	
risk management			
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		

2.16 Contributing scenario controlling consumer exposure for: PC31: Polishes, spray (furniture, shoes)

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Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	142 g	
	Exposure duration	1,23 h	
Frequency and duration of use	Frequency of use	29 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 430 cm ²	
risk management			
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

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

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



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No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 15	1, 4	NA	ES600
2	Distribution of substance	3	8, 9	NA	1, 2, 3, 4, 8a, 8b, 9, 15	1, 2, 3, 4, 5, 6a, 7	NA	ES628
3	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15	2	NA	ES630
4	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15	4	NA	ES632
5	Uses in coatings	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 10, 11, 13, 15, 19	8a, 8d	NA	ES229
6	Uses in coatings	21	NA	1, 4, 8, 9a, 9b, 15, 18, 23, 24, 31, 34	NA	8a, 8d	NA	ES363
7	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 10, 13	4	NA	ES636
8	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 8a, 8b, 10, 11, 13	8a, 8b, 8d	NA	ES319
9	Use in Cleaning Agents	21	NA	9a, 9b, 24, 35	NA	8a, 8d	NA	ES392
10	Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13	8a, 8d	NA	ES322
11	Use in agrochemicals	21	NA	12, 27	NA	8a, 8d	NA	ES481
12	Use as a fuel	3	NA	NA	1, 2, 3, 8a, 8b, 16	7	NA	ES189
13	Use as a fuel	22	NA	NA	1, 2, 3, 8a, 8b, 16	8b, 8e, 9a, 9b	NA	ES326
14	Use as a fuel	21	NA	13	NA	9a, 9b	NA	ES485
15	Use as lubricants	3	NA	NA	1, 2, 3, 4, 7, 8a, 8b, 9, 10, 13, 17, 18	4, 7	NA	ES177
16	Use as lubricants	21	NA	1, 24, 31	NA	8a, 8d, 9a, 9b	NA	ES471
17	Use in laboratories	3	NA	NA	10, 15	2, 4	NA	ES217

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18	Use in laboratories	22	NA	NA	10, 15	8a	NA	ES329
19	Use in metal working fluids / rolling oils	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 17	4	NA	ES183



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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		
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) 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 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	ERC1: Manufacture of substances ERC4: Industrial use of processing aids in processes and products, not becoming part of articles		
Activity	Manufacture of substance or use as an intermediate, process chemical or extracting agent. Includes recycling/recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).		

2.1 Contributing scenario controlling environmental exposure for: ERC1

No exposure assessment presented for the environment.

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 100 % (unless stated differently).				
	Physical Form (at time of use)	liquid			
	Vapour pressure	> 10 kPa			
	Assumes use at not more than 20 ℃ above ambient temperature.				
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).				
Technical conditions and	Storage	Store substance within a closed system.(PROC1, PROC2)			
measures to control dispersion from source towards the worker	Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.(PROC8a)			
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Conditions and measures related to personal protection, hygiene and health evaluation Use suitable eye protection.

Avoid direct eye contact with product, also via contamination on hands.

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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: Distribution of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products) 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 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	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC3: Formulation in materials ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC7: Industrial use of substances in closed systems		
Activity	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading, distribution and associated laboratory activities.		

2.1 Contributing scenario controlling environmental exposure for: ERC1

No exposure assessment presented for the environment.

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

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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	> 10 kPa			
Assumes use at not more than 20 ℃ above ambient temperature.				
	Substance in Mixture/Article Physical Form (at time of use) Vapour pressure			



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Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems)	Handle substance within a closed system.(PROC1)	
	General exposures (closed systems)	Clear transfer lines prior to de-coupling.(PROC4)	
	Equipment cleaning and maintenance	Drain down system prior to equipment opening or maintenance.(PROC8a)	
	Bulk transfers (closed systems)	Handle substance within a closed system.(PROC8b)	
	Drum and small package filling	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection	n.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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

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Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations
Activity	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC2

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

	Physical Form (at time of use)	liquid			
Due di cat ale que ete vietica	Vapour pressure	> 10 kPa			
Product characteristics	Assumes use at not more than 20°C above ambient temperature.				
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).				
Technical conditions and measures to control dispersion from source towards the worker	General exposures (closed systems)	Handle substance within a closed system.(PROC2, PROC3)			
	Storage	Store substance within a closed system. Transfer via enclosed lines. Locate bulk storage outdoors.(PROC1, PROC2)			
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	Provide extraction ventilation at points where emissions occur.(PROC5, PROC14)		
	Transfer from/pouring from containers Manual	Use drum pumps or carefully pour from container.(PROC8a, PROC8b)	
	Drum/batch transfers	Drain down and flush system prior to equipment opening or maintenance.(PROC8a)	
	Drum and small package filling	Fill containers/cans at dedicated filling points supplied with local extract ventilation.(PROC9)	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. Wear a respirator conforming to EN140 with Type A filter or better.(PROC5, PROC14)		

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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

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Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

2.1 Contributing scenario controlling environmental exposure for: ERC4

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

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	> 10 kPa		
Assumes use at not more than 20 ℃ above ambient temperature.			
	Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure		



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Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
	General exposures (closed systems)	Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Ensure material transfers are under containment or extract ventilation.(PROC2, PROC3)			
	Provide extraction ventilation at points where emissions occur.(PROC4, PROC5, PROC13, PROC14, PROC15)			
	Spraying (automatic/robotic)	Carry out in a vented booth provided with laminar airflow.(PROC7)		
	Spraying/fogging by manual application	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC7)		
Technical conditions and	Clear transfer lines prior to de-coupling.(PROC8a, PROC8b)			
measures to control dispersion from source towards the worker	Material transfers Drum/batch transfers Transfer from/pouring from containers	Provide extract ventilation to material transfer points and other openings.(PROC9)		
	Roller, spreader, flow application	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC10)		
	Production of preparations or articles by tabletting, compression, extrusion, pelettisation	Avoid manual contact with wet work pieces.(PROC13)		
Conditions and measures related	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.			
to personal protection, hygiene and health evaluation	Spraying/fogging by manual application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)		

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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

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risks are managed to at least equivalent levels.	
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1. Short title of Exposure Scenario 5: Uses in coatings

<u> </u>		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available	
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	
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation) and equipment cleaning, maintenance and associated laboratory activities.	

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct orial actoriolists	Vapour pressure	> 10 kPa	
	Assumes use at not more than 20 °C above ambient temperature.		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Other operational conditions	Avoid carrying out operation for more than 4 hours.		

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affecting workers exposure		
allecting workers exposure	General exposures (closed systems) Filling / preparation of equipment from drums or containers	Handle substance within a closed system.(PROC1, PROC2)
	Filling / preparation of equipment from drums or containers	Ensure material transfers are under containment or extract ventilation.(PROC2)
	Preparation of material for application	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC3)
Technical conditions and measures to control dispersion from source towards the worker	Film formation - air drying Indoor	Provide extraction ventilation at points where emissions occur. Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC4)
	Preparation of material for application Indoor	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC5)
	Drum/batch transfers	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC8a)
	Material transfers Drum/batch transfers	Provide extract ventilation to material transfer points and other openings.(PROC8b)
	Roller, spreader, flow application Indoor	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC10)
	Spraying/fogging by manual application Indoor	Carry out in a vented booth or extracted enclosure.(PROC11)
	Dipping, immersion and pouring Indoor	Provide extraction ventilation at points where emissions occur. Avoid manual contact with wet work pieces.(PROC13)
	Dipping, immersion and pouring Outdoor.	Ensure operation is undertaken outdoors. Avoid manual contact with wet work pieces.(PROC13)
	Laboratory activities	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC15)
	Hand application - finger paints, pastels, Adhesives Indoor	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC19)
	Hand application - finger	Ensure operation is undertaken outdoors.(PROC19



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		paints, pastels, Adhesives Outdoor.		
		Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.		
		Film formation - air drying Outdoor.	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC4)	
		Preparation of material for application Indoor	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC5)	
ŀ	Conditions and measures related to personal protection, hygiene and health evaluation	Drum/batch transfers	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC8a)	
		Spraying/fogging by manual application Outdoor.	Avoid carrying out operation for more than 4 hours.(PROC11)	
		Preparation of material for application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC5, PROC10, PROC11, PROC19)	
		Spraying/fogging by manual application Hand application - finger paints, pastels, Adhesives Outdoor.	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11, PROC19)	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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1. Short title of Exposure Scenario 6: Uses in coatings

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Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC1: Adhesives, sealants PC4: Anti-freeze and de-icing products PC8: Biocidal products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC15: Non-metal-surface treatment products PC18: Ink and toners PC23: Leather tanning, dye, finishing, impregnation and care products PC24: Lubricants, greases, release products PC31: Polishes and wax blends PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids	
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	
Activity	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.	

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC1: Glues, hobby use

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%
Product characteristics	Physical Form (at time of use)	liquid
Troduct characteristics	Vapour pressure	> 10 kPa
Amount used	Amount used per event	9 g
	Exposure duration per day	4 h
Frequency and duration of use	Frequency of use	365 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²
Other given operational	Room size	20 m3
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conditions affecting consumers exposure	Covers use under typical h	ousehold ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
		osure for: PC1: Glues DIY-use (carpet glue,		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 Pa		
Amount used	Amount used per event	6,390 kg		
	Exposure duration per day	6 h		
Frequency and duration of use	Frequency of use	1 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
2.5 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glue from spray		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%		
Product characteristics	Physical Form (at time of use)	liquid		
Troduct characteristics	Vapour pressure	> 10 kPa		
Amount used	Amount used per event	85,05 g		
Frequency and duration of use	Exposure duration per	4 h		
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	Ι.	1
	day	
	Frequency of use	6 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²
Other given operational conditions affecting consumers	Room size	20 m3
	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	
2.6 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Sealants
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	75 g
	Exposure duration per	1 h

Product characteristics	Mixture/Article	20 %.	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	75 g	
Frequency and duration of use	Exposure duration per day	1 h	
	Frequency of use	365 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²	
Other given operational conditions affecting consumers exposure	Room size	34 m3	
	Ventilation rate per hour	0,6	
	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

2.7 Contributing scenario controlling consumer exposure for: PC4: Washing car window Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Covers percentage substance in the product up to 1 %. liquid Vapour pressure > 10 kPa

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Frequency and duration of use

Amount used	Amount used per event	0,5 g
	Exposure duration per day	0,02 h
Frequency and duration of use	Frequency of use	365 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.8 Contributing scenario controlling consumer exposure for: PC4: Pouring into radiator Concentration of the Substance in Concentration of substance in product: 0% - 10%

Product characteristics	Mixture/Article	, , , , , , , , , , , , , , , , , , ,	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	

Amount used	Amount used per event	2 kg
	Exposure duration per	0,17 h

Frequency of use

Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm ²

risk management		
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure		(0.4 0)

365 days/year

cxpocuro	Covers use in a one car garage (34 m3) under typical ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.



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2.9 Contributing scenario controlling consumer exposure for: PC8: Cleaners, liquids				
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.		
Product characteristics	Physical Form (at time of use)	liquid		
Troduct orial action blood	Vapour pressure	> 10 Pa		
Amount used	Amount used per event	27 g		
Frequency and duration of use	Exposure duration per day	0,33 h		
	Frequency of use	128 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers exposure	Ventilation rate per hour	0,6		
	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			

2.10 Contributing scenario controlling consumer exposure for: PC8: Cleaners, trigger sprays

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 15%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
	Amount used per event	35 g
Amount used		1 9
	Exposure duration per day	0,17 h
Frequency and duration of use	Frequency of use	128 days/year
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 428 cm ²
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risk management		
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.11 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint

	Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 25 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,744 kg
	Exposure duration per day	2,2 h
Frequency and duration of use	Frequency of use	6 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.12 Contributing scenario controlling consumer exposure for: PC9a: Aerosol spray can

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Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
	Physical Form (at time of use)	liquid	
Troduct orial actoriolics	Vapour pressure	> 10 Pa	



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Amount used	Amount used per event	0,215 kg		
	Exposure duration per day	0,33 h		
Frequency and duration of use	Frequency of use	2 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	34 m3		
conditions affecting consumers	Ventilation rate per hour 1,5			
exposure	Covers use in a one car garage (34 m3) under typical ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			

2.13 Contributing scenario controlling consumer exposure for: PC9a: Removers (paint-, glue-, wall paper-, sealant-remover)

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%		
Product characteristics	Physical Form (at time of use)	liquid		
1 Todact characteristics	Vapour pressure > 10 Pa			
Amount used	Amount used per event	0,491 kg		
Frequency and duration of use	Exposure duration per day	2 h		
	Frequency of use	3 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			



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2.15	Contributing scenario	cont	rollin	g	consumer	exposure for: PC9b: Fillers and putty
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	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct orial action blood	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	85 g	
Frequency and duration of use	Exposure duration per day	4 h	
	Frequency of use	12 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Ventilation rate per hour	0,6	
	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

2.16 Contributing scenario controlling consumer exposure for: PC9b: Plasters and floor equalizers

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2%	
	Physical Form (at time of use)	liquid	
. Todast stratastoriolios	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	13,8 kg	
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Frequency and duration of use	Exposure duration per day	2 h	
	Frequency of use	12 days/year	
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Amount used



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Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical h	ousehold ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
2.17 Contributing scenario water borne paint	controlling consumer e	exposure for: PC15: Solvent rich, high solid,		
Product characteristics	Physical Form (at time of use)	liquid		
Product characteristics	Vapour pressure	> 10 Pa		
Amount used	Amount used per event	0,744 kg		
Francisco and direction of the	Exposure duration per day	2,2 h		
Frequency and duration of use	Frequency of use	6 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical h	ousehold ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
2.18 Contributing scenario	controlling consumer e	exposure for: PC15: Aerosol spray can		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 Pa		

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Amount used per event

0,215 kg



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Frequency and duration of use	Exposure duration per day	0,33 h	
	Frequency of use	2 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers	Ventilation rate per hour	1,5	
exposure	Covers use in a one car garage (34 m3) under typical ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

2.19 Contributing scenario controlling consumer exposure for: PC15: Removers (paint-, glue-, wall paper-, sealant remover)

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Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%		
	Physical Form (at time of use)	liquid		
1 Toddet characteristics	Vapour pressure > 10 Pa			
Amount used	Amount used per event	0,491 kg		
Frequency and duration of use	Exposure duration per day	2 h		
	Frequency of use	3 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
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2.20 Contributing scenario controlling consumer exposure for: PC18



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	Substance in Mixture/Article			
	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 Pa		
Amount used	Amount used per event	40 g		
	Exposure duration per day	2,2 h		
Frequency and duration of use	Frequency of use	365 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 71,4 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			

2.21 Contributing scenario controlling consumer exposure for: PC23: Polishes, wax/cream (floor, furniture, shoes)

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	56 g
For any and dispating of	Exposure duration per day	1,23 h
Frequency and duration of use	Frequency of use	29 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²
Other given operational conditions affecting consumers	Room size	20 m3
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exposure	Ventilation rate per hour	0,6		
	Covers use under typical household ventilation.			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational		
2.22 Contributing scenario shoes)	controlling consumer e	exposure for: PC23: Polishes, spray (furniture,		
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 Pa		
		1		
Amount used	Amount used per event	56 g		
Frequency and duration of use	Exposure duration per day	0,33 h		
Trequency and defaultion of disc	Frequency of use	8 days/year		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²		
Other given operational	Room size	20 m3		
conditions affecting consumers	Ventilation rate per hour	0,6		
exposure	Covers use under typical h			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			
2.23 Contributing scenario	controlling consumer e	exposure for: PC24: Liquids		
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	> 10 Pa		
Amount used	Amount used per event	2,2 kg		

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Frequency and duration of use	Exposure duration per day	0,17 h	
	Frequency of use	4 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers	Ventilation rate per hour	1,5	
exposure	Covers use in a one car garage (34 m3) under typical ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.24 Contributing scenario	controlling consumer e	vnosure for: PC24: Pastes	

2.24	Contributing	scenario	controlling	consumer ex	posure for:	PC24: Pastes
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	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 20%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	34 g	
-	Exposure duration per day	6 h	
Frequency and duration of use	Frequency of use	10 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		

2.25 Contributing scenario controlling consumer exposure for: PC24: Sprays

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa

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Amount used	Amount used per event	73 g	
	Exposure duration per day	0,17 h	
Frequency and duration of use	Frequency of use	6 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational	

2.26 Contributing scenario controlling consumer exposure for: PC31: Polishes, wax / cream (floor, furniture, shoes)

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteriolics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	142 g	
Frequency and duration of use	Exposure duration per day	1,23 h	
	Frequency of use	29 days/year	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²	
Other given operational conditions affecting consumers exposure	Room size	20 m3	
	Ventilation rate per hour	0,6	
	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		



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protection and hygiene)		
2.27 Contributing scenario shoes)	controlling consumer e	exposure for: PC31: Polishes, spray (furniture,
·	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Duadicat above stavistics	Physical Form (at time of use)	liquid
Product characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	35 g
Frequency and duration of use	Exposure duration per day	0,33 h
' '	Frequency of use	8 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational
2.28 Contributing scenario	controlling consumer e	exposure for: PC34
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 10%
Product characteristics	Physical Form (at time of use)	liquid
1 Toddet Characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,115 kg
Frequency and duration of use	Exposure duration per day	1 h
	Fraguency of use	26E days/year

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365 days/year

Frequency of use



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Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Consumers

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

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

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

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 7: Use in Cleaning Agents

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
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 PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing 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	
Activity	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.	

2.1 Contributing scenario controlling environmental exposure for: ERC4

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, 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	> 10 kPa	
	Assumes use at not more than 20 ℃ above ambient temperature.		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers	Ensure material transfers are under containment or extract ventilation.(PROC8b)	
	Provide extraction ventilation at points where emissions occur.(PROC4, PROC13)		
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	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC7, PROC10)	
	Use suitable eye protection.	
	Avoid direct eye contact with product, also via contamination on hands.	
	Avoid carrying out operation for more than 4 hours.	
	or	
Conditions and measures related	Wear a respirator conforming to EN140 with Type A filter or better.(PROC2)	
	Avoid carrying out operation for more than 1 hour.	
to personal protection, hygiene and health evaluation	or	
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC3,	
	PROC7, PROC10)	
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC7,	
	PROC10)	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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 Cleaning Agents

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
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 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 ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems	
Activity	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand).	

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
The second of a second	Vapour pressure	> 10 kPa
	Assumes use at not more than 20 °C above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Surfaces cleaning Manual Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC10)	



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	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC4)
	Cleaning of medical devices	Provide extraction ventilation at points where emissions occur.(PROC4)
	Filling / preparation of equipment from drums or containers	Ensure operation is undertaken outdoors.(PROC8a)
	Filling / preparation of equipment from drums or containers	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC8b)
	Cleaning with low- pressure washers Rolling, Brushing	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC10)
	Surfaces cleaning Manual	Ensure doors and windows are opened.(PROC10)
	Ad hoc manual application via trigger sprays, dipping, etc	Provide extraction ventilation at points where emissions occur.(PROC10)
	Cleaning with high pressure washers Spraying Indoor	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.(PROC11)
	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	
Conditions and measures related to personal protection, hygiene and health evaluation	Surfaces cleaning Manual	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
	Automated process with (semi) closed systems	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC2, PROC3)
	Semi-automated process (e.g.: Semi-automatic application of floor care and maintenance products)	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC4)
	Application of cleaning products in closed systems	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A
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	filter or better.(PROC4)
Cleaning of medical devices	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC4)
Filling / preparation of equipment from drums or containers	Wear a respirator conforming to EN140 with Type A filter or better.(PROC8a)
Filling / preparation of equipment from drums or containers	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC8b)
Surfaces cleaning Manual	Avoid carrying out operation for more than 1 hour. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
Ad hoc manual application via trigger sprays, dipping, etc	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC10)
Cleaning with high pressure washers Spraying Outdoor.	Avoid carrying out operation for more than 4 hours. or Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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 in Cleaning Agents

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)	
Chemical product category	PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC24: Lubricants, greases, release products PC35: Washing and cleaning products (including solvent based 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	
Activity	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.	

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint

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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
Troduct characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,744 kg
	Exposure duration per event	2 h
Frequency and duration of use	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.	

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protection and hygiene)		
2.3 Contributing scenario co	ntrolling consumer expo	osure for: PC9a: Aerosol spray can
	Concentration of the	
	Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
Troduct characteristics	Vapour pressure	> 10 Pa
	Amount used per event	0,215 kg
Amount used	7 tillount abou por overit	0,210 Ng
	Exposure duration per	0,33 h
Frequency and duration of use	event Eraguanay of usa	2 dayahrar
	Frequency of use Frequency of use	2 days/year 1 Times per day
Lluman factors not influenced by	Exposed skin areas	Covers skin contact area up to 857,5 cm ²
Human factors not influenced by risk management	Exposed skill areas	Govers skill contact area up to 657,5 cm
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car ga	rage (34 m3) under typical ventilation.
Conditions and measures related to protection of consumer (e.g.		ent measure identified beyond those operational
behavioural advice, personal	conditions stated.	
protection and hygiene)		
2.4 Contributing scenario co paper-, sealant-remover)	ntrolling consumer expo	osure for: PC9a: Removers (paint-, glue-, wall
paper , coalain remeter,	Concentration of the	
Product characteristics	Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of	liquid
	use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	0,491 kg
	Exposure duration per	2 h
Frequency and duration of use	event	
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	Frequency of use	3 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.5 Contributing scenario controlling consumer exposure for: PC9b			
	Concentration of the		

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	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 2%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	13,8 kg
	Exposure duration per event	2 h
Frequency and duration of use	Frequency of use	12 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.6 Contributing scenario controlling consumer exposure for: PC24: Liquids

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	liquid
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	Vapour pressure	> 10 Pa
Amount used	Amount used per event	2,2 kg
	Exposure duration per event	0,17 h
Frequency and duration of use	Frequency of use	4 days/year
, ,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Ventilation rate per hour	1,5
	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.7 Contributing scenario controlling consumer exposure for: PC24: Pastes

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 20 %.
	Physical Form (at time of use)	liquid
Troddot characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	34 g
	Exposure duration per event	2,2 h
Frequency and duration of use	Frequency of use	10 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation.	
Conditions and measures related	No specific risk management measure identified beyond those operational	

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to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	conditions stated.	
2.8 Contributing scenario con	ntrolling consumer expo	sure for: PC24: Sprays
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 20%
Product characteristics	Physical Form (at time of use)	liquid
Froduct characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	73 g
	Exposure duration per event	0,17 min
Frequency and duration of use	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk manageme conditions stated.	nt measure identified beyond those operational
protection and hygiene)		
2.9 Contributing scenario controlling consumer exposure for: PC35: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)		
oleaners, samury produc	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 5%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	27 g
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	Exposure duration per event	0,33 min
Frequency and duration of use	Frequency of use	128 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.10 Contributing scenario controlling consumer exposure for: PC35: Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners)

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 15%
	Physical Form (at time of use)	liquid
Troduct orial action stillo	Vapour pressure	> 10 Pa
Amount used	Amount used per event	35 g
	Exposure duration per event	0,17 min
Frequency and duration of use	Frequency of use	128 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	



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3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Consumers

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

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

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

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



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1. Short title of Exposure Scenario 10: Use in agrochemicals

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure 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 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
Activity	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, 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	> 10 kPa
	Assumes use at not more t	han 20℃ above ambient temperature.
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
	Storage	Store substance within a closed system.(PROC1, PROC2)
Technical conditions and measures to control dispersion from source towards the worker	Mixing operations (open systems) Transfer from/pouring from containers Ad hoc manual application via trigger sprays, dipping, etc	Ensure operation is undertaken outdoors.(PROC4, PROC8b, PROC13)



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	Disposal of wastes	Ensure operation is undertaken outdoors.(PROC8a)
	Spraying (automatic/robotic)	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	Disposal of wastes	Avoid carrying out operation for more than 1 hour.(PROC8a)
	Equipment cleaning and maintenance	Avoid carrying out operation for more than 1 hour.(PROC8a)
	Disposal of wastes	Wear suitable gloves tested to EN374.(PROC8a)
Conditions and measures related to personal protection, hygiene and health evaluation	Equipment cleaning and maintenance	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC8a)
	Spraying/fogging by machine application	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	Ad hoc manual application via trigger sprays, dipping, etc	Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better.(PROC13)

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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 in agrochemicals

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC12: Lawn and garden preparations, including fertilizers (- Fertilizers) PC27: Plant protection 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
Activity	Covers the consumer use of agrochemicals in liquid and solid forms.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC12, PC27

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 5%	
Product characteristics	Physical Form (at time of use)	liquid	
Amount used	Amount used per event	50 g	
	Exposure duration per event	0,5 h	
Frequency and duration of use	Frequency of use	365 days/year	
, ,	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857,5 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than 2.5%(PC27)	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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Consumers

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

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

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.



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1. Short title of Exposure Scenario 12: Use as a fuel

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
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) 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 PROC16: Using material as fuel sources, limited exposure to unburned product to be expected	
Environmental Release Categories	ERC7: Industrial use of substances in closed systems	
Activity	Covers the use as a fuel (or fuel additive), and includes activities associated with its transfer, use, equipment maintenance and handling of waste.	

2.1 Contributing scenario controlling environmental exposure for: ERC7

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16

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	> 10 kPa	
	Assumes use at not more than 20 ℃ above ambient temperature.		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Store substance within a closed system. Transfer via enclosed lines. Ensure operation is undertaken outdoors.(PROC1, PROC2) Handle substance within a closed system.(PROC1, PROC2, PROC3, PROC16) Drain down and flush system prior to equipment opening or maintenance. Apply vessel entry procedures including use of supplied compressed air.(PROC8a) Bulk transfers Handle substance within a closed system.		



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	Drum/batch transfers	Use drum pumps or carefully pour from container.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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

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

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 as a fuel

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
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) 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 PROC16: Using material as fuel sources, limited exposure to unburned product to be expected
Environmental Release Categories	ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Covers the use as a fuel (or fuel additive), and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

2.1 Contributing scenario controlling environmental exposure for: ERC8b, ERC8e, ERC9a, ERC9b

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16

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	> 10 kPa	
	Assumes use at not more t	han 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
	Storage	Store substance within a closed system.(PROC1, PROC2)	
Technical conditions and	Handle substance within a closed system.(PROC1, PROC2, PROC3, PROC16)		
measures to control dispersion from source towards the worker	Drain down and flush system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle.(PROC8a)		
	Vessel and container cleaning	Apply vessel entry procedures including use of supplied compressed air.(PROC8a)	



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	Bulk transfers	Handle substance within a closed system. Clear transfer lines prior to de-coupling.(PROC8b)
	Drum/batch transfers	Use drum pumps or carefully pour from container.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

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 14: Use as a fuel

	Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
	Chemical product category	PC13: Fuels
	Environmental Release Categories	ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity		Covers consumer uses in liquid fuels.

2.1 Contributing scenario controlling environmental exposure for: ERC9a

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC13: Liquid: Automotive Refuelling, PC13: Liquid: Scooter Refuelling

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	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Amount used per event	37,5 kg (PC13)		
Amount used	Amount used per event	3,75 kg (PC13)		
	Exposure duration per event	0,05 h(PC13)		
Frequency and duration of use	Exposure duration per event	0,03 h(PC13)		
	Frequency of use	52 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 210 cm ²		
Other given operational	Room size	100 m3		
conditions affecting consumers exposure	Ventilation rate per hour 0,6			
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.			

2.3 Contributing scenario controlling consumer exposure for: PC13: Liquid: Garden Equipment -

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Use, PC13: Liquid: Garde	n Equipment - Refueling	<u></u>	
,	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
Amount used	Amount used per event	0,750 kg	
	Exposure duration per event	2 h(PC13)	
Frequency and duration of use	Exposure duration per event	0,03 h(PC13)	
	Frequency of use	26 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 420 cm ²	
	Room size	100 m3(PC13)	
	Ventilation rate per hour	0,6(PC13)	
Other given operational conditions affecting consumers exposure	Covers use under typical household ventilation.(PC13)		
	Room size	34 m3(PC13)	
	Ventilation rate per hour	1,5(PC13)	
	Covers use in a one car garage (34 m3) under typical ventilation.(PC13)		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.		
2.4 Contributing scenario co	ntrolling consumer expo	osure for: PC13: Liquid: Lamp oil	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
Amount used	Amount used per event	0,100 kg	
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Frequency and duration of use	Exposure duration per event	0,01 h
	Frequency of use	1 Times per day
	Frequency of use	52 days/year
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 210 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Consumers

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

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

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.



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1. Short title of Exposure Scenario 15: Use as lubricants

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
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 PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process PROC18: Greasing at high energy conditions
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
Activity	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC7

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18

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	> 10 kPa	
	Assumes use at not more than 20 ℃ above ambient temperature.		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Other operational conditions affecting workers exposure	Operation is carried out at elevated temperature (> 20 °C above ambient temperature).(PROC8b)		
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		Handle substance within a	closed system.(PROC1, PROC2, PROC3)	
		Spraying	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)	
		Maintenance of small items	Avoid carrying out operation for more than 4 hours.(PROC8a)	
	Technical conditions and measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers	Transfer via enclosed lines. Use drum pumps or carefully pour from container.(PROC8a, PROC8b)	
		Maintenance (of larger plant items) and machine set up	Clear lines prior to de-coupling. Provide extract ventilation to emission points when contact with warm (>50oC) product is likely.(PROC8b)	
		Remanufacture of reject articles	Avoid carrying out operation for more than 4 hours.(PROC9)	
		Ensure material transfers are under containment or extract ventilation. (PROCS		
		Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC10)		
		Restrict area of openings to	equipment.(PROC13, PROC17, PROC18)	
	Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.		
		Maintenance (of larger plant items) and machine set up	Wear suitable gloves tested to EN374.(PROC8b)	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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 be a second of the conditions are adopted.

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

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 16: Use as lubricants

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC1: Adhesives, sealants PC24: Lubricants, greases, release products PC31: Polishes and wax blends
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 ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems
Activity	Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d, ERC9a, ERC9b

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling consumer exposure for: PC1: Glues, hobby use

	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
Troduct characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	9 g	
	Exposure duration per event	4 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal	No specific risk management measure identified beyond those operational conditions stated.		

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protection and hygiene)			
2.3 Contributing scenario co tile glue, wood parquet g		osure for: PC1: Glues DIY-use (carpet glue,	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
1 Toddet characteristics	Vapour pressure	> 10 Pa	
		,	
Amount used	Amount used per event	6,390 kg	
	Exposure duration per event	6 h	
Frequency and duration of use	Frequency of use	1 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 110 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers	Ventilation rate per hour	0,6	
exposure	Covers use under typical household ventilation.		
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational	
2.4 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glue from spray	
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 30%	
Product characteristics	Physical Form (at time of use)	liquid	
1 Toddet characteristics	Vapour pressure	> 10 Pa	
Amount used	Amount used per event	85,05 g	
Frequency and duration of use	Exposure duration per event	4 h	

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	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical h	ousehold ventilation.
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk manageme conditions stated.	ent measure identified beyond those operational
2.5 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Sealants
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	75 g
	Exposure duration per event	1 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35,73 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than
2.6 Contributing scenario co	ntrolling consumer expo	osure for: PC24: Liquids
Droduct above etaviation	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa

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	> 10 Pa

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Amount used	Amount used per event	2,2 kg
	Exposure duration per event	0,17 h
Frequency and duration of use	Frequency of use	4 days/year
	Frequency of use	1 Times per day
		'
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²
Other given operational	Room size	34 m3
conditions affecting consumers	Ventilation rate per hour	1,5
exposure	Covers use in a one car garage (34 m3) under typical ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.7 Contributing scenario controlling consumer exposure for: PC24: Pastes

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 20%
	Physical Form (at time of use)	liquid
Troduct characteristics	Vapour pressure	> 10 Pa
Amount used	Amount used per event	34 g
	Exposure duration per event	6 h
Frequency and duration of use	Frequency of use	10 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g.	No specific risk management measure identified beyond those operational conditions stated.	

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behavioural advice, personal protection and hygiene)		
2.8 Contributing scenario co	ntrolling consumer expo	osure for: PC24: Sprays
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
1 TOGUCE CHARACTERISTICS	Vapour pressure	> 10 Pa
	Amount used per event	73 g
Amount used	Amount assa per event	, , , , ,
	Exposure duration per event	0,17 h
Frequency and duration of use	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428,75 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers	Ventilation rate per hour	0,6
exposure	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	
2.9 Contributing scenario co furniture, shoes)	ntrolling consumer expo	osure for: PC31: Polishes, wax / cream (floor,
	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	142 g
Frequency and duration of use	Exposure duration per	1,23 h
1		

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	event	
	Frequency of use	29 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Ventilation rate per hour	0,6
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

2.10 Contributing scenario controlling consumer exposure for: PC31: Polishes, spray (furniture, shoes)

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 0% - 50%
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 Pa
Amount used	Amount used per event	35 g
	Exposure duration per event	0,33 h
Frequency and duration of use	Frequency of use	8 days/year
, ,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Ventilation rate per hour	0,6
	Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	No specific risk management measure identified beyond those operational conditions stated.	

3. Exposure estimation and reference to its source

Environment

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No exposure assessment presented for the environment.

Consumers

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

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

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

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



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1. Short title of Exposure Scenario 17: Use in laboratories

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Use of the substance within laboratory settings, including material transfers and equipment cleaning

2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4

No exposure assessment presented for the environment.

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	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	cleaning Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC10)	
Organisational measures to prevent /limit releases, dispersion and exposure	Ensure the ventilation system is regularly maintained and tested.	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

Workers

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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

Exposure Scenario		
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.		
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 18: Use in laboratories

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
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	
Activity	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.	

2.1 Contributing scenario controlling environmental exposure for: ERC8a

No exposure assessment presented for the environment.

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	> 10 kPa
	Assumes use at not more than 20 °C above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	cleaning	Provide a good standard of controlled ventilation (10 to 15 air changes per hour)(PROC10)
Owner is a time of the control of	Ensure the ventilation system is regularly maintained and tested.	
Organisational measures to prevent /limit releases, dispersion and exposure	cleaning	Avoid carrying out operation for more than 1 hour.(PROC10)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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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 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. 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 19: Use in metal working fluids / rolling oils

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Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
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 PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC17: Lubrication at high energy conditions and in partly open process
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers the use in formulated MWFs (MWFs)/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

2.1 Contributing scenario controlling environmental exposure for: ERC4

No exposure assessment presented for the environment.

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17

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	> 10 kPa
	Assumes use at not more than 20 ℃ above ambient temperature.	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and	Handle substance within a closed system.(PROC1, PROC2, PROC3)	

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measures to control dispersion from source towards the worker	Filling / preparation of equipment from drums or containers	Use drum pumps or carefully pour from container.(PROC5, PROC8b, PROC9)
	Spraying	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC7)
	Bulk transfers	Provide enhanced general ventilation by mechanical means. or Ensure operation is undertaken outdoors. Clear transfer lines prior to de-coupling.(PROC8b)
	Process sampling	Use dedicated equipment.(PROC8b)
	Provide enhanced general ventilation by mechanical means.(PROC10, PROC13)	
	Metal machining operations	Provide extraction ventilation at points where emissions occur. Restrict area of openings to equipment.(PROC17)
	Semi-automated metal rolling/forming	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.(PROC17)
Organisational measures to prevent /limit releases, dispersion and exposure	Bulk transfers	Avoid carrying out operation for more than 1 hour.(PROC8b)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands.	

3. Exposure estimation and reference to its source

Environment

No exposure assessment presented for the environment.

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

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.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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