

ACETONE

Version 2.1

Print Date 29.11.2023

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

1.1. Product identifier

	Trade name Substance name Index-No. CAS-No. EC-No. EU REACH-Reg. No.	 ACETONE acetone 606-001-00-8 67-64-1 200-662-2 01-2119471330-49-xxxx 	
1.2.	Relevant identified uses of	of the substance or mixture and uses advised against	
	Use of the Substance/Mixture	: Identified use: See table in front of appendix for a complete overview of identified uses.	
	Uses advised against	: At this moment we have not identified any uses advised against	
	Remarks	: Before referring to any Exposure Scenario attached to this Safety Data Sheet please check the grade of the product: the Exposure Scenarios presented are not related to all product grade	
1.3.	Details of the supplier of	the safety data sheet	
	Company Telephone Telefax E-mail address Responsible/issuing person	 Brenntag N.V. Nijverheidslaan 38 BE 8540 Deerlijk +32 (0)56 77 6944 +32 (0)56 77 5711 info@brenntag.be Master Data Administration 	
	Company Telephone Telefax E-mail address Responsible/issuing person	 Brenntag Nederland B.V. Donker Duyvisweg 44 NL 3316 BM Dordrecht +31 (0)78 65 44 944 +31 (0)78 65 44 919 info@brenntag.nl Master Data Administration 	
1.4.	Emergency telephone nu	mber	
	Emergency telephone	: Belgium: Antipoison Center - Brussels TEL: +32(0)70 245 245	
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number

Netherland: National Poisoning Information Center - Bilthoven TEL: +31(0) 88 755 8000 (Only for the purpose of informing medical personnel in cases of acute intoxications)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008						
Hazard class	Hazard category	Target Organs	Hazard statements			
Flammable liquids	Category 2		H225			
Eye irritation	Category 2		H319			
Specific target organ toxicity - single exposure	Category 3	Central nervous system	H336			

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

Most important adverse effects

Human Health	:	See section 11 for toxicological information.
Physical and chemical hazards	:	See section 9/10 for physicochemical information.
Potential environmental effects	:	See section 12 for environmental information.

2.2. Label elements

Labelling according to	Labelling according to Regulation (EC) No 1272/2008					
Hazard symbols	:					
Signal word	:	Danger				
Hazard statements	:	H225 H319 H336		Highly flammable liquid and vapour. Causes serious eye irritation. May cause drowsiness or dizziness.		
Precautionary statements						
Prevention	:	P210		Keep away from heat, hot surfaces, sparks,		
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	Response		P243 P280 P303 + P361 + I P304 + P340 P305 + P351 + I	immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	Storage	:	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
	Additional Labelling: EUH066 Repeated ex Hazardous component • acetone	xposure r		
2.3.				ts considered to be either persistent, stent and very bioaccumulative (vPvB) at levels of
	Ecological information endocrine disrupting regulation (EU) 2017/ Toxicological informa have endocrine disru	propertie /2100 or tion: The pting pro	s according to R Commission Reg substance/mixtu perties according	does not contain components considered to have EACH Article 57(f) or Commission Delegated gulation (EU) 2018/605 at levels of 0.1% or higher. are does not contain components considered to to REACH Article 57(f) or Commission Delegated gulation (EU) 2018/605 at levels of 0.1% or higher.
SEC 3.1.	CTION 3: Composition Substances	n/inform	ation on ingre	dients
	Hazardous compone	ents	Amount [%]	Classification (REGULATION (EC) No 1272/2008) Hazard class / Hazard category Hazard statements

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acetone					
Index-No. CAS-No. EC-No. EU REACH- Reg. No.	: 606-001-00-8 : 67-64-1 : 200-662-2 : 01-2119471330-49-xxxx	>= 90 - <= 100	Flam. Liq.2 Eye Irrit.2 STOT SE3	H225 H319 H336 EUH066	
neg. No.					

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

SECTION 4: First aid measures

4.1. Description of first aid measures

	General advice	: Remove from exposure, lie down. Take off all contaminated clothing immediately. If symptoms call a physician.	
	If inhaled	: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position. Consult a physician after significant exposure.	
	In case of skin contact	: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.	
	In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. If eye irritation persists, consult a specialist.	
	If swallowed	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately.	
	Protection of First Aid Responders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing.	
4.2.	Most important symptoms	and effects, both acute and delayed	
	Symptoms	: acidosis, Controle the alkaline reserve, Shortness of breath, Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. See Section 11 for more detailed information on health effects and symptoms.	
	Effects	: Aspiration hazard if swallowed - can enter lungs and cause damage. Aspiration may cause pulmonary oedema and pneumonitis.	
4.3.	Indication of any immediat	e medical attention and special treatment needed	
	Treatment	: Treat symptomatically.Later control for pneumonia and lung	
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oedema.In case of shortness of breath, give oxygen.Artificial respiration and/or oxygen may be necessary.

SECTION 5: Firefighting measures

5.1. Extinguishing media

 Suitable extinguishing media
 :
 Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

 Unsuitable extinguishing media
 :
 High volume water jet

 5.2.
 Special hazards arising from the substance or mixture

5.3.	Specific hazards during firefighting Hazardous combustion products Advice for firefighters	Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground. Vapours may form explosive mixtures with air. Flash back possible over considerable distance. Carbon monoxide, Carbon dioxide (CO2)
	Special protective equipment for firefighters Further advice	In the event of fire, wear self-contained breathing apparatus.Wear appropriate body protection (full protective suit) Cool closed containers exposed to fire with water spray.Heating will cause a pressure rise - with risk of bursting.Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	: Keep away from heat and sources of ignition. Keep away unprotected persons. Use personal protective equipment.
	Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours or spray mist.

6.2. Environmental precautions

Environmental	: Do not flush into surface water or sanitary sewer system.
precautions	Avoid subsoil penetration. If the product contaminates rivers
·	and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to
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local / national regulations (see section 13).

Further information

: Treat recovered material as described in the section "Disposal considerations".

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6.4. Reference to other sections

See Section 1 for emergency contact information. See Section 8 for information on personal protective equipment. See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

	Advice on safe handling	: Keep container tightly closed. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.
	Hygiene measures	: Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately.
7.2.	Conditions for safe storag	e, including any incompatibilities
	Requirements for storage	: Store in original container. Keep in an area equipped with

	areas and containers	solvent resistant flooring. Suitable materials for containers: Mild steel; Iron; Unsuitable materials for containers: plastic materials
	Advice on protection against fire and explosion	: Keep away from sources of ignition - No smoking. The vapour may be invisible, heavier than air and spread along ground. Vapours may form explosive mixtures with air. Take measures to prevent the build up of electrostatic charge. Use only in an area containing explosion proof equipment.
	Further information on storage conditions	: Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep in a well-ventilated place.
	Advice on common storage	: Incompatible with oxidizing agents. Do not store together with oxidizing and self-igniting products. Keep away from food, drink and animal feedingstuffs.
3.	Specific end use(s)	

7.3. Specific end use(s)

> Specific use(s) : Identified use: See table in front of appendix for a complete overview of identified uses.

SECTION 8: Exposure controls/personal protection

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8.1. Control parameters

Component:	acetone		CAS-No. 67-64-1
Derived No Effect Le	vel (DNEL)/Derived Minima	al Effe	ect Level (DMEL)
DNEL Workers, Long-term - systemic	effects, Skin contact	:	186 mg/kg bw/day
DNEL Workers, Long-term - systemic	effects, Inhalation	:	1210 mg/m3
DNEL Workers, Acute - local effects,	Inhalation	:	2420 mg/m3
DNEL Consumers, Long-term - syster	nic effects, Skin contact	:	62 mg/kg bw/day
DNEL Consumers, Long-term - syster	nic effects, Inhalation	:	200 mg/m3
DNEL Consumers, Long-term - syster	nic effects, Ingestion	:	62 mg/kg bw/day
Predicte	ed No Effect Concentration	ו (PN	EC)
Fresh water		:	10,6 mg/l
Marine water		:	1,06 mg/l
Intermittent releases		:	21 mg/l

Sewage treatment plant (STP)

Fresh water sediment

Marine sediment

Soil

: 100 mg/l

: 29,5 mg/kg

:

:

30,4 mg/kg, 30,4 mg/kg d.w.

3,04 mg/kg, 3,04 mg/kg d.w.

Other Occupational Exposure Limit Values

Belgium. OELs. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1, as amended, Short Term Exposure Limit (STEL): 492 ppm, 1.187 mg/m3, (15 minutes)

Belgium. OELs. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1, as amended, Time Weighted Average (TWA): 246 ppm, 594 mg/m3

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EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended, Time Weighted Average (TWA): 500 ppm, 1.210 mg/m3 Indicative

Netherlands. OELs (binding), as amended, Time Weighted Average (TWA): 500 ppm, 1.210 mg/m3

Netherlands. OELs (binding), as amended, Short Term Exposure Limit (STEL): 1.000 ppm, 2.420 mg/m3, (15 minutes)

EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended, Time Weighted Average (TWA): 500 ppm, 1.210 mg/m3 Indicative

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

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	Advice		Solvent resistant protective clothing	
	Skin and body protecti	ion		
	Advice	:	Goggles giving complete protection to the eyes	
	Eye protection			
	Break through time Glove thickness		>= 4 h 0,5 mm	
	Material		butyl-rubber	
	Advice	:	Protective gloves complying with EN 374. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Protective gloves should be replaced at first signs of wear.	5.
			Protective alower complying with EN 274	
	Hand protection			
	Advice	:	In case of insufficient ventilation, wear suitable respiratory equipment. Respiratory protection complying with EN 141. Recommended Filter type:AX In case of intensive or longer exposure use self-contained breathing apparatus.	

Environmental exposure controls

General advice :	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.
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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	:	liquid
Physical state	:	liquid
Colour	:	colourless
Odour	:	sweet, aromatic
Odour Threshold	:	13 ppm
Melting point/range	:	-94,7 °C
Boiling point/boiling range	:	56,05 °C
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	14,3 %(V)
Lower explosion limit / Lower flammability limit	:	2,5 %(V)
Flash point	:	-17 °C Method: closed cup
Auto-ignition temperature	:	465 °C
Decomposition temperature	:	235 °C
Self-Accelerating decomposition temperature (SADT)	:	No data available
рН	:	5 - 6 (20 °C) Concentration: 395 g/l
Viscosity Viscosity, dynamic	:	0,32 mPa.s (20 °C)
Viscosity, kinematic	:	No data available
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Flow time	:	No data available
Solubility(ies) Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Dissolution Rate	:	No data available
Partition coefficient: n- octanol/water	:	log Pow: -0,24 (20 °C)
Dispersion Stability	:	No data available
Vapour pressure	:	240 hPa (20 °C)
		800 hPa (50 °C)
Relative density	:	No data available
Density	:	0,79 g/cm3 (20 °C)
Bulk density	:	No data available
Relative vapour density	:	2,1 (20 °C)
Particle characteristics No data available		
9.2 Other information Explosives	:	Formation of explosive air/vapour mixtures is possible.
Flammability (liquids)	:	Highly flammable liquid and vapour.
Evaporation rate	:	2,0 (ether = 1)
Molecular weight	:	58,09 g/mol
SECTION 10: Stability and rea	ctiv	/ity
10.1. Reactivity		
Advice	: N	lo decomposition if used as directed.
10.2. Chemical stability		
Advice	: 5	Stable under recommended storage conditions.
10.3. Possibility of hazardous re	acti	ons
Hazardous reactions	: \	apours may form explosive mixture with air. Possible
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		formation of normalida
		formation of peroxide.
0.4.	Conditions to avoid	
	Conditions to avoid Thermal decomposition	: Heat, flames and sparks. : 235 °C
10.5.	Incompatible materials	
	Materials to avoid	: Strong reducing agents, Oxidizing agents, Halogenated compounds, Alkali metals, Ethanolamine, Hydrogen peroxide, Ammonium nitrate, Organic peroxides, potassium permanganate, Nitric acid, Alkali hydroxide
10.6.	Hazardous decomposition	products
	Hazardous decomposition products	: Under fire conditions: Carbon oxides

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SECTION 11: Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

Component:	acetone	CAS-No. 67-64-1	
	Acute toxicity		
	Oral		
LD50	: 5800 mg/kg (Rat) (OECD Test Guid and throat, nausea, vomiting, dizzin unconsciousness.		
	Inhalation		
LC50 : ca. 76 mg/l (Rat; 4 h) May cause pain in nose and throat, r dizziness, headache, deteriorate reactivity and at high concentration unconsciousness.			
	Dermal		
LD50	: > 15800 mg/kg (Rat)		
	Irritation		
	Skin		
Result	: No skin irritation (Guinea pig) Repe dryness or cracking.	ated exposure may cause skin	
	Eyes		
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BRENNTAG ACETONE Result Irritating to eyes. (Rabbit) (OECD Test Guideline 405)May cause • corneal damage. Sensitisation Result not sensitizing (Guinea pig) (OECD Test Guideline 406) : **CMR** effects Carcinogenicity (negative, Mouse, female)(Dermal)(No guideline followed) **CMR** Properties Carcinogenicity Animal testing did not show any carcinogenic effects. Tests on bacterial or mammalian cell cultures did not show Mutagenicity : mutagenic effects. In vivo tests did not show mutagenic effects Teratogenicity Causes developmental effects in animals at high doses. : Reproductive toxicity Animal testing did not show any effects on fertility. : Genotoxicity in vitro Result negative (Chromosome aberration test in vitro; CHO (Chinese Hamster Ovary) cells; with and without metabolic activation) (OECD Test Guideline 473) negative (In vitro gene mutation study in mammalian cells; Mouse Lymphoma Cells; no) (OECD Test Guideline 476) negative (Bacterial Reverse Mutation Test; Salmonella typhimurium; with and without metabolic activation) (OECD Test Guideline 471) Genotoxicity in vivo Result negative (In vivo micronucleus test; Mouse, male and female) : Teratogenicity (Prenatal Developmental Toxicity Study; Rat)(Inhalation)(OECD Test Guideline 414)negative **Specific Target Organ Toxicity** Single exposure Target Organs: Central nervous systemMay cause drowsiness or Remarks

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dizziness.

	Repeated exposure	_
Remarks	: Based on available data, the classification criteria are not met.	
	Other toxic properties	
	Repeated dose toxicity	
NOAEL	: 900 mg/kg bw/day	
NOAEC	(Rat)(Oral; 90-day) : 22500 mg/m ³	
	(Rat)(Inhalation; 8 Weeks)	
	Aspiration hazard	
	Based on available data, the classification criteria are not met.,	
	Further information	
Experience with human exposure	 Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Chronic exposure may cause dermatitis. Chronic inhalation causes tiredness, headache and rhinitis., 	
1.2. Information on other	hazards	
Data for the product		
	Endocrine disrupting properties	
Assessment	: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.	
SECTION 12: Ecological	information	
2.1. Toxicity		
Component:	acetone CAS-No. 67-64-	1
	Acute toxicity	
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	Fish				
LC50 LC50	: 5.540 mg/l (Oncorhynchus mykiss; 96 h) 11.000 mg/l (Alburnus alburnus; 96 h)				
Toxicity to daphnia and other aquatic invertebrates					
LC50	: 8.800 mg/l (Daphnia pulex (Water flea); 48 h)				
	algae				
NOEC	: 430 mg/l (Prorocentrum minimum; 96 h)				
	Bacteria				
EC12	: 1000 mg/l (activated sludge; 0,5 h) (static test; End point: Respiration inhibition; OECD Test Guideline 209)				
	Chronic toxicity				
	Aquatic invertebrates				
NOEC	2212 mg/l (Daphnia pulex (Water flea); 28 d) (End point: Reproduction)				
2. Persistence and	degradability				
Component:	acetone CAS-No. 67-64-1				
	Persistence and degradability				
	Persistence				
Result	: decomposition by hydrolysis.				
	Biodegradability				
Result	: 91 % (Exposure Time: 28 d)(OECD Test Guideline 301B)Readily biodegradable.				
3. Bioaccumulative	potential				
	acetone CAS-No. 67-64-1				
Component:					

Bioaccumulation

Result

log Kow -0,24
BCF: 3; (BCFWIN-software)Bioaccumulation is not expected.

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12.4. Mobility in soil

Component:	acetone	CAS-No. 67-64-1
	Mobility	
Air	: The product evaporates readily.	
Water	: The product is water soluble.	
Soil	: Mobile in soils	

12.5. Results of PBT and vPvB assessment

	Results of PBT and vPvB assessr	nent
Result	: This substance/mixture contains n either persistent, bioaccumulative persistent and very bioaccumulativ higher.	and toxic (PBT), or very
Component:	acetone	CAS-No. 67-64-
	Results of PBT and vPvB assessr	nent
Result	: This substance is not considered t nor toxic (PBT)., This substance is persistent and very bioaccumulati	s not considered to be very

12.6. Endocrine disrupting properties

Data for the product		
potential 12.7. Other adverse effects	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.	-
Data for the product		
	Additional ecological information	
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Result :	Avoid subsoil penetration.	ater or sanitary sewer system.					
Component:	acetone	CAS-No. 67-64-1					
Biochemical Oxygen Demand (BOD)							
Result :	1760 mg/g (Incubation time	e: 5 d)					
Chemical Oxygen Demand (COD)							
Result :	: 2100 mg/g						
	Additional ecological infe	ormation					
Result :	Do not flush into surface wa Avoid subsoil penetration.	ater or sanitary sewer system.					
SECTION 13: Disposal con	iderations						
3.1. Waste treatment method	ls						
Product	disposal required acco product enter drains. C product shall be dispos	normal waste is not allowed. Special ording to local regulations. Do not let Contact waste disposal services. This sed of or recovered in compliance with on waste as lastly amended.					
Contaminated packagin	recycled after thorough practicable, dispose of	backagings thoroughly. They can be h and proper cleaning. If recycling is not i in compliance with local regulations. cutting torch on, the empty drum. Risk of					
European Waste Catalogue Number	can be assigned for th	ing to the European Waste Catalogue is product, as the intended use dictates vaste code is established in consultation e disposer.					
SECTION 14: Transport info	ormation						
4.1. UN number or ID numbe	r						
1090							
14.2. UN proper shipping na	me						
ADR : ACETONE RID : ACETONE IMDG : ACETONE							
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	EIONE						
14.3.	Transport hazard class(es	5)					
	ADR-Class (Labels; Classification Cod Identification Number; Tur code) RID-Class (Labels; Classification Cod Identification Number) IMDG-Class (Labels; EmS)	nnel restriction	: 3 3; F1; 33; (D/E) : 3 3; F1; 33 : 3 3; F-E, S-D				
14.4.	Packaging group						
	ADR : II RID : II IMDG : II						
14.5.	Environmental hazards						
	Environmentally hazardous according to ADR : no Environmentally hazardous according to RID : no Marine Pollutant according to IMDG-Code : no						
14.6.	Special precautions for user						
	Not applicable.						
14.7	Maritime transport in bulk according to IMO instruments						
	Not applicable for product as supplied.						
SEC ⁻	TION 15: Regulatory info	ormation					
15.1.	Safety, health and enviror mixture	nmental regulatio	ons/legislation specific for the substance or				
	Component:	acetone	CAS-No. 67-64-1				
	omponent.	acelone	CAS-NO. 07-04-1				
	EU. Regulation 273/2004, Drug Precursors, Category 3	: Scheduled s 2914 11 00	ubstance Combined Nomenclature (CN) code: ,				
	EU. Restricted (Annex I)		REPORTABLE EXPLOSIVES PRECURSORS: ances on their own or in mixtures or in substances				
	& Reportable (Annex II) Explosives Precursors, Regulation 2019/1148/EU on Explosives Precursors	for which su	spicious transactions and significant ces and thefts are to be reported within 24 hours.				

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EU.	Directive	: Qualifying qua	ntity for the application of Lower-tier	
III) a	2/18/EU (SEVESO on major accident	substances; FI	5.000 tonnes; Part 1: Categories of dangerous ammable liquids, Categories 2 or 3 not covered	
	ards involving gerous substances, ex l		b, The information given is valid if the product is ne boiling point and at a pressure of 1013 hPa.	
	54 1	requirements:	ntity for the application of Upper-tier 50.000 tonnes; Part 1: Categories of dangerous	
		by P5a and P5	ammable liquids, Categories 2 or 3 not covered bb, The information given is valid if the product is ne boiling point and at a pressure of 1013 hPa.	
Notifi aceto	ication status			
	ulatory List S	Notification YES YES	Notification number	
EIN	- ECS CS (JP)	YES YES	200-662-2 (2)-542	
IECS	SC	YES YES	(<i>L</i>) ⁻ 07 <i>L</i>	
ISHI	L (JP)	YES	(2)-542	
	(JP) CI (KR)	YES YES	(2)-542 KE-29367	
NZIO	OC Í	YES	HSR001070	
	Γ INV CS (PH)	YES YES		
TCS	SI Ó	YES		
TH I		YES	55-1-05314 2914.11	
TH I TSC		YES YES	2914.11	
	INVL	YES		
15.2. Chem	nical safety assessm	ent		
A Che	emical Safety Assessr	nent has been carrie	ed out for this substance.	
SECTION ·	16: Other informati	on		
Full to	ext of H-Statements	referred to under s	ections 2 and 3.	
H22		hly flammable liquid		
H31 H33		uses serious eye irrit y cause drowsiness		
		'		
Full to	ext of the Notes refe	rred to under section	on 3.	
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Abbreviations and Acronyms

AU AIICL	Australia. Industrial Chemicals Act (AIIC) List
BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
DSL	Canada. Environmental Protection Act, Domestic Substances List
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS (JP)	Japan. Kashin-Hou Law List
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IECSC	China. Inventory of Existing Chemical Substances
INSQ	Mexico. National Inventory of Chemical Substances
ISHL (JP)	Japan. Inventory of Industrial Safety & Health
KECI (KR)	Korea. Existing Chemicals Inventory
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NDSL	Canada. Environmental Protection Act. Non-Domestic Substances List
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
NZIOC	New Zealand. Inventory of Chemicals
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
ONT INV	Canada. Ontario Inventory List
PBT	persistent, bioaccumulative and toxic
PHARM (JP)	Japan. Pharmacopoeia Listing
PICCS (PH)	Philippines. Inventory of Chemicals and Chemical Substances
PNEC	predicted no-effect concentration
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number
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UK REACH Auth. No.:	UK REACH Authorisation Number
UK REACH AuthAppC. No.	UK REACH Authorisation Application Consultation Number
UK REACH-Reg.No	UK REACH Registration Number
STOT	specific target organ toxicity
SVHC	substance of very high concern
TCSI	Taiwan. Existing Chemicals Inventory
TH INV	Thailand. Existing Chemicals Inventory from FDA
TSCA	US. Toxic Substances Control Act
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
VN INVL	Vietnam. National Chemical Inventory
vPvB	very persistent and very bioaccumulative
Further information	
Key literature references : and sources for data	Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
Methods used for : product classification	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
Hints for trainings :	The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.
Other information :	The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.
Indicates updated section.	



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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	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7668
2	Distribution of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7846
3	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
4	Rubber production and processing	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14	6d	NA	ES7680
5	Polymer production	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7682
6	Polymer production	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7741
7	Polymer processing	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7684
8	Polymer processing	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7743
9	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 19	4	NA	ES7672
10	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
11	Uses in coatings	21	NA	1, 4, 9a, 9b, 9c, 15, 24, 31	NA	8a, 8c, 8d, 8f	NA	ES8830
12	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 19	4	NA	ES7686
13	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11,	8a, 8d	NA	ES7745
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					13, 19			
14	Use in Cleaning Agents	21	NA	3, 4, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES8831
15	Use as binders and release agents	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13	5	NA	ES7678
16	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
17	Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13, 19	8a, 8d	NA	ES7749
18	Use in laboratories	3	NA	NA	10, 15, 19	4	NA	ES7670
19	Use in laboratories	22	NA	NA	10, 15, 19	8a	NA	ES7735
20	Use as blowing agents	3	NA	NA	1, 2, 3, 8b, 9, 12	4, 10a	NA	ES7690
21	Use in de-icing and anti-icing applications	22	NA	NA	1, 2, 8b, 11, 19	8d	NA	ES7751
22	Use in de-icing and anti-icing applications	21	NA	4	NA	8d	NA	ES8832
23	Use in Oil and Gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 8a, 8b	4	NA	ES7688
24	Use in Oil and Gas field drilling and production operations	22	NA	NA	1, 2, 3, 4, 8a, 8b	8d	NA	ES7747
25	Explosives manufacture & use	22	NA	NA	1, 3, 5, 8a, 8b	8d	NA	ES7753
26	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



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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
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 PROC9b: 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, pelettisation 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 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 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 measures to reduce or limit discharges, air emissions and releases to soil	Air	Closed system, or, Treated by scrubbers		
	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	Contain and dispose of waste in accordance with environmental legislation and			
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to external treatment of waste for disposal	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, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15						
5	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	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

ECETOC TRA	4			
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
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PROC5.

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
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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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.

For scaling see ECT Tool:

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

Health

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.

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

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

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
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, pelettisation 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 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	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.	cross sites thus conservative process release
Organizational measures to prevent/limit release from the site		
Conditions and measures related	Contain and dispose of wa	ste in accordance with environmental legislation and
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to external treatment of waste for disposal	according to local regulatio	ns.
Conditions and measures related to external recovery of waste	If recycling is not practicabl	le, dispose of in compliance with local regulations.
2.2 Contributing scenario co PROC5, PROC6, PROC8a		re for: PROC1, PROC2, PROC3, PROC4, C10, 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	0	ors. f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a
from 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	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA	A			
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
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PBOC5

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
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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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.

For scaling see ECT Tool:

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

Health

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.

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

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

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
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, pelettisation 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 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	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.	cross sites thus conservative process release
Organizational measures to prevent/limit release from the site		

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Conditions and measures related Contain and dispose of waste in accordance with environmental legislation and to external treatment of waste for according to local regulations. disposal Conditions and measures related If recycling is not practicable, dispose of in compliance with local regulations. to external recovery of waste 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15 Concentration of the Covers percentage substance in the product up to Substance in 100 % (unless stated differently). Mixture/Article Product characteristics Physical Form (at time of liquid use) 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, Technical conditions and windows etc. Controlled ventilation means air is supplied or removed by a measures to control dispersion 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 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

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,		Inhalation	250ppm	0,50

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PROC8a, PROC10 PROC5, PROC8a PROC6, PROC10 PROC8b PROC8b PROC8b PROC9 PROC14, PROC15			
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
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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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Main User Groups	SU 3: Industrial uses: Us sites	es of substances as such or in preparations at industria
Process categories	PROC2: Use in closed, c PROC3: Use in closed b PROC4: Use in batch an exposure arises PROC5: Mixing or blendi and articles (multistage al PROC6: Calendering ope PROC7: Industrial sprayi PROC8a: Transfer of sub vessels/large containers a PROC8b: Transfer of sub vessels/large containers a PROC9: Transfer of sub filling line, including weigh PROC10: Roller applicat PROC13: Treatment of a	erations ng ostance or preparation (charging/discharging) from/to at non-dedicated facilities ostance or preparation (charging/discharging) from/to at dedicated facilities stance or preparation into small containers (dedicated hing)
Environmental Release	ERC6d: Industrial use of	process regulators for polymerisation processes in
Categories	production of resins, rubb	ers, polymers
2.1 Contributing scenario co Substance is a unique structure, F	ntrolling environmenta Readily biodegradable.	
2.1 Contributing scenario co Substance is a unique structure, F Amount used	ntrolling environmenta	ers, polymers
2.1 Contributing scenario co Substance is a unique structure, F Amount used Frequency and duration of use	ntrolling environmenta 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 environmenta Readily biodegradable. To be defined by site	ers, polymers al exposure for: ERC6a, ERC6b, ERC6c, ERC6c
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 environmenta Readily biodegradable. To be defined by site Continuous exposure	ers, polymers al exposure for: ERC6a, ERC6b, ERC6c, 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	ntrolling environmenta Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use.	al exposure for: ERC6a, ERC6b, ERC6c, ERC6c 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	ntrolling environmenta Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air	al exposure for: ERC6a, ERC6b, ERC6c, ERC6c 360 days/year 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	ntrolling environmenta Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air	al exposure for: ERC6a, ERC6b, ERC6c, ERC6c 360 days/year 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	ntrolling environmenta Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary a	al exposure for: ERC6a, ERC6b, ERC6c, ERC6c 360 days/year Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %) Closed system, or, Treated by scrubbers or, Charcoal adsorbers
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	ntrolling environmenta Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary a estimates used.	al exposure for: ERC6a, ERC6b, ERC6c, ERC6d 360 days/year 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 vaste in accordance with environmental legislation and
2.1 Contributing scenario co Substance is a unique structure, F Amount used	ntrolling environmental Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Common practices vary a estimates used. Contain and dispose of w according to local regulation	al exposure for: ERC6a, ERC6b, ERC6c, ERC6d 360 days/year 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 vaste in accordance with environmental legislation and



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to external recovery of waste

	re for: PROC1, PROC2, PROC3, PROC4, C9, PROC10, PROC13, PROC14	
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	
Covers daily exposures up	to 8 hours (unless stated differently).	
 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 		
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.(PROC7)		
	PROC8a, PROC8b, PRO Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Covers daily exposures up Locate bulk storage outdoor Provide a good standard or windows etc. Controlled very powered fan. Sample via a closed loop of Handle substance within a Ensure material transfers a or Ensure operation is undert Use suitable eye protection Wear chemically resistant e employee training. If above technical/organisa following PPE:	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TR/	4			
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,		Inhalation	250ppm	0,50
PA100058_001		13/95		EN



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PROC8a, PROC10, PROC13				
PROC5, PROC8a		Dermal	13,71mg/kg/day	0,07
PROC6, PROC10		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	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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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.

PA100058_001



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1. Short title of Exposure Scenario 5: Polymer production

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 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	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

2.1 Contributing scenario controlling environmental exposure for: ERC6d

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	If recycling is not practicable, dispose of in compliance with local regulations.		
PA100058_001	15/95	; EN	



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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, 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.		
2 Evenesuus estimation and	we found a statistic common		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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, 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
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PROC6

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
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 6: Polymer production

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 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
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 controlling environmental exposure for: ERC8a, ERC8c, ERC8d, 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 co PROC9, PROC14	ntrolling worker exposi	ure for: PROC1, PROC2, PROC8a, PROC8b,	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
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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)		
Technical conditions and measures to control dispersion from source towards the worker	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 Avoid carrying out operation for more than 4 hours.(PROC14)		
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		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

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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 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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 7: Polymer processing

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 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	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

2.1 Contributing scenario controlling environmental exposure for: ERC6d

Substance is a unique structure, Readily biodegradable.

To be defined by site		
Continuous exposure 360 days/year		
Indoor/Outdoor use.		
Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
Air	Closed system, or, Treated by scrubbers	
Air	or, Charcoal adsorbers	
Common practices vary across sites thus conservative process release estimates used.		
Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
If recycling is not practicable, dispose of in compliance with local regulations.		
PA100058_001 21/95		
	Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary a estimates used. Contain and dispose of w according to local regulat If recycling is not practica	



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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15			
Due do et als ana stanistica	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.		
	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. 		
2. Europeuro estimation and reference to ite course			

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA

	LOLIOO MA				
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,		Inhalation	250ppm	0,50	
PA100058_001		22/95		EN	



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PROC8a, PROC10, PROC13			
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, 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**

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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: Polymer processing

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 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
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 controlling environmental exposure for: ERC8a

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, PROC8a, PROC8b, PROC9, PROC14			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
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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)		
Technical conditions and measures to control dispersion from source towards the worker	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 Avoid carrying out operation for more than 4 hours.(PROC14)		
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		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

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PROC8a.

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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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: Uses in coatings

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

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is a unique structure, Readily biodegradable.

Amount used			
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	Charcoal adsorbers, or, Treated by scrubbers	
measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	Air	or, Charcoal adsorbers	
	Common practices vary a estimates used.	across sites thus conservative process release	
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.		
PA100058_001	27/95 EN		



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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC19

Due du et alterna et aristica	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. 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	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic'		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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,		Inhalation	250ppm	0,50
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PROC10, PROC13, PROC19				
PROC5, PROC8a, PROC13		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
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 10: Uses in coatings

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 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 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 controlling environmental exposure for: ERC8a, ERC8c, ERC6d, 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.		
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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, PROC5, PROC8a, PROC8b, PROC9, 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		
	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.			
		r other system to avoid exposure. closed system.(PROC1, PROC2, PROC3)		
	or	re under containment or extract ventilation. aken outdoors.(PROC5, PROC8a)		
	or	n for more than 4 hours.(PROC5, PROC8a)		
Technical conditions and	Ensure material transfers are under containment or extract ventilation.			
measures to control dispersion from source towards the worker	or			
nom source towards the worker	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 g	gloves (tested to EN374) in combination with 'basic'		
	employee training.			
Conditions and measures related to personal protection, hygiene	If above technical/organisational control measures are not feasible, then adopt following PPE:			
and health evaluation		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 to EN374.(PROC19)			
3. Exposure estimation and reference to its source				

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Environment

No information available.

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Workers

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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	Dermal	64,28mg/kg/day	0,35
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	substance in product: 5% - 25%			
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
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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: Uses in coatings

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 controlling environmental exposure for: ERC8a, ERC8c, ERC8d, 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	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	te	
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 expo	osure for: PC1: Glues, hobby use
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa

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Amount used	Amount used per event	9 g
	Exposure duration	< 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	Exposed skin areas	Covers skin contact area up to 35,73 cm ²
risk management		
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical l temperatures.	nousehold ventilation., Covers use at ambient
2.3 Contributing scenario co	ntrolling consumer exp	osure for: PC1. Glues DIV-use (carnet alue

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

the glue, wood parquet g	the glue, wood parquet 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 h temperatures.	ousehold ventilation., Covers use at ambient		
2.4 Contributing scenario co	ntrolling consumer expo	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		
		1		
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		
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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	ntrolling consumer expo	osure for: PC4: Washing car window
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product 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
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		arage (34 m3) under typical ventilation.
exposure		
2.6 Contributing scenario co		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	Room size	34 m3
conditions affecting consumers		
exposure	e Covers use in a one car garage (34 m3) under typicar	
2.7 Contributing scenario co	ntrolling consumer expo	osure for: PC4: Lock de-icer
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of	liquid
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	use)	
	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
requercy 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 214,4 cm ²
risk management	Exposed skill aleas	Covers skill contact area up to 214,4 cm-
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car ga	arage (34 m3) under typical ventilation.
	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
Amount used	Exposure duration	2,2 h
Frequency and duration of use	Frequency of use	
Frequency and duration of use	Frequency of use	4 days/year
Human factors not influenced by		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 h 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



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	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 h temperatures.	ousehold ventilation., Covers use at ambient
2.10 Contributing scenaric Aerosol spray can	o controlling consumer e	exposure for: PC9a: Aerosol spray can, F
	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	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 risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²
nortmanagoment		
Other given operational	Room size	34 m3
conditions affecting consumers	Room size Covers use in a one car ga	34 m3 arage (34 m3) under typical ventilation.
exposure 2.11 Contributing scenario	Covers use in a one car ga	arage (34 m3) under typical ventilation. exposure for: PC9a: Removers (paint-, gl
conditions affecting consumers exposure 2.11 Contributing scenaric	Covers use in a one car ga	arage (34 m3) under typical ventilation. exposure for: PC9a: Removers (paint-, gl
conditions affecting consumers exposure 2.11 Contributing scenario	Covers use in a one car ga controlling consumer e over), PC15: Removers (p Concentration of the Substance in	arage (34 m3) under typical ventilation. exposure for: PC9a: Removers (paint-, gl paint-, glue-, wall paper-, sealant remove
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo	Covers use in a one car ga controlling consumer e over), PC15: Removers (p Concentration of the Substance in Mixture/Article Physical Form (at time of	arage (34 m3) under typical ventilation. exposure for: PC9a: Removers (paint-, gloaint-, gloaint-, glue-, wall paper-, sealant remove Covers concentrations up to 50%
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo	Covers use in a one car ga controlling consumer e over), PC15: Removers (p Concentration of the Substance in Mixture/Article Physical Form (at time of use)	arage (34 m3) under typical ventilation. exposure for: PC9a: Removers (paint-, gl paint-, glue-, wall paper-, sealant remove Covers concentrations up to 50% liquid
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo	Covers use in a one car ga controlling consumer e over), PC15: Removers (p Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure	arage (34 m3) under typical ventilation. Exposure for: PC9a: Removers (paint-, glesting) paint-, glue-, wall paper-, sealant remove Covers concentrations up to 50% liquid 240 hPa
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo Product characteristics Amount used	Covers use in a one car ga controlling consumer e over), PC15: Removers (p Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event	Arage (34 m3) under typical ventilation. Exposure for: PC9a: Removers (paint-, gloaint-, gloaint-, glue-, wall paper-, sealant remove Covers concentrations up to 50% liquid 240 hPa 491 g
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo Product characteristics Amount used	Covers use in a one car ga controlling consumer e over), PC15: Removers (p Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used per event Exposure duration	Arage (34 m3) under typical ventilation. Exposure for: PC9a: Removers (paint-, gloaint-, glue-, wall paper-, sealant remove Covers concentrations up to 50% liquid 240 hPa 491 g 2 h
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo Product characteristics Amount used Frequency and duration of use Human factors not influenced by	Covers use in a one car ga	Arage (34 m3) under typical ventilation. Exposure for: PC9a: Removers (paint-, gloaint-, gloaint-, glue-, wall paper-, sealant remove Covers concentrations up to 50% liquid 240 hPa 491 g 2 h 3 days/year
conditions affecting consumers exposure 2.11 Contributing scenaric wall paper-, sealant-remo	Covers use in a one car ga	Arage (34 m3) under typical ventilation. Exposure for: PC9a: Removers (paint-, gloaint-, gloaint-, glue-, wall paper-, sealant remove Covers concentrations up to 50% liquid 240 hPa 491 g 2 h 3 days/year 1 Times per day



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2.12 Contributing scenario	controlling consumer e	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 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.	ousehold ventilation., Covers use at ambient		
2.13 Contributing scenario equalizers	controlling consumer e	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		
	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.			
2.14 Contributing scenario controlling consumer exposure for: PC9c: Finger paints				
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	240 hPa
Americational		1.05 ~
Amount used	Amount used per event	1,35 g
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 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 e	exposure for: PC24: Sprays
	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	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 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.	
2.16 Contributing scenario shoes)	controlling consumer e	exposure for: PC31: Polishes, spray (furniture
	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	142 g
Frequency and duration of use	Exposure duration	1,23 h
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	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	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

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.

For scaling see ECT Tool:

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

Health

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.

Risk characterization ratios (RCRs) were calculated by comparing the predicted exposure levels with the corresponding DNELs (derived no effect levels) (RCR = exposure level/DNEL)



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1. Short title of Exposure Scenario 12: 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 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	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

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 Organizational measures to	Common practices vary ac estimates used.	cross sites thus conservative process release	
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,			
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PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, 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. 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	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.(PROC7)		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA Contributing **Specific conditions Exposure routes** Scenario PROC1 Inhalation ----PROC1, PROC3 ----Dermal PROC2 ---Inhalation PBOC2 Dermal

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,	 Inhalation	250ppm	0,50

Level of Exposure

0,01ppm

50ppm

0,34mg/kg/day

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RCR

0,00002

0,002

0,10



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PROC19				
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
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 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 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 indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

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 Organizational measures to prevent/limit release from the site	Common practices vary ac estimates used.	ross sites thus conservative process release	
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 con	2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4,		
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PROC5, PROC8a, PROC8	b, PROC9, PROC10, PRO	DC11, PROC13, 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).	
	windows etc. Controlled ve powered fan. Sample via a closed loop o	f general ventilation. Natural ventilation is from doors, intilation means air is supplied or removed by a or other system to avoid exposure.	
		closed system.(PROC1, PROC2, PROC3)	
	ensure material transfers a	are under containment or extract ventilation.	
		aken outdoors.(PROC5, PROC8a)	
Technical conditions and measures to control dispersion from source towards the worker	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a) 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 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 underta		
	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 to personal protection, hygiene	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)		
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		

3. Exposure estimation and reference to its source

Environment

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No information available.

Workers

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, 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,	Inhalation	252ppm	0,50
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	Concentration of substance in product: 5% - 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
PROC11		Inhalation	300ppm	0,60
PROC11	half mask	Inhalation	100ppm	0,20
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 in Cleaning 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	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

Substance is a unique structure, Readily biodegradable.

	To be defined by othe	
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	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 consumer exposure for: PC3: Aircare, instant action (aerose sprays)		

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 per event	0,1 g
Exposure duration	0,25 h
Frequency of use	365 days/year
Frequency of use	4 Times per day
Exposed skin areas	Covers skin contact area up to 6600 cm ²
Room size	20 m3
Covers use under typical household ventilation., Covers use at ambient temperatures.	
	Exposure duration Frequency of use Frequency of use Exposed skin areas Room size Covers use under typical I

2.4 Contributing scenario controlling consumer exposure for: PC3: Aircare, continuous action (solid & liquid)

(solia & liquia)		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
	Physical Form (at time of use)	solid
Amount used	Amount used per event	0,48 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 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	ntrolling consumer expo	osure for: PC4: Washing car window
Product characteristics	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	0,5 g
Frequency and duration of use	Exposure duration	0,02 h
	Frequency of use	365 days/year
	Frequency of use	1 Times per day
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Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car garage (34 m3) 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 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 risk management	Exposed skin areas	Covers skin contact area up to 428 cm ²
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car garage (34 m3) under typical ventilation.	
2.7 Contributing scenario co	ntrolling consumer expo	osure for: PC4: Lock de-icer
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	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 risk management	Exposed skin areas	Covers skin contact area up to 214,4 cm ²
Other given operational	Room size	34 m3
conditions affecting consumers exposure		rage (34 m3) under typical ventilation.
	ntrolling consumer expo	osure for: PC9a: Waterborne latex wall paint
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1,5%
	Physical Form (at time of	liquid
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	use)	
	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	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	

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

mator borno pante		
	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	Exposed skin areas	Covers skin contact area up to 428,75 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.	
2.10 Contributing scenario	controlling consumer e	exposure for: PC9a: 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
Amount used	Amount used per event	215 g
Frequency and duration of use	Exposure duration	0,33 min
Frequency and duration of use	Frequency of use	2 days/year

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exposure	temperatures.		
Other given operational conditions affecting consumers	Room size Covers use under typical h	20 m3 ousehold ventilation., Covers use at ambient	
risk management	· · ·		
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 35,73 cm ²	
requeries and duration of use	Frequency of use	1 Times per day	
Frequency and duration of use	Frequency of use	12 days/year	
Amount used	Amount used per event Exposure duration	85 g 4 h	
Amount used	· ·	95 a	
	Vapour pressure	240 hPa	
Product characteristics	Physical Form (at time of use)	liquid	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%	
2.12 Contributing scenario	controlling consumer e	exposure for: PC9b: Fillers and putty	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
Other given operational	Room size	20 m3	
risk management			
Human factors not influenced by	Frequency of use Exposed skin areas	1 Times per day Covers skin contact area up to 857,5 cm ²	
Frequency and duration of use	Frequency of use	3 days/year	
Francisco en el el station (Exposure duration	2 h	
Amount used	Amount used per event	491 g	
	Vapour pressure	240 hPa	
Product characteristics	Physical Form (at time of use)	liquid	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
2.11 Contributing scenario wall paper-, sealant-remo		exposure for: PC9a: Removers (paint-, glue	-,
exposure			
conditions affecting consumers	Room size	34 m3 rage (34 m3) under typical ventilation.	
risk management Other given operational			
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
	Frequency of use	1 Times per day	



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		T
	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	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.14 Contributing scenario	o controlling consumer e	exposure for: PC9b: Modelling clay
	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%
Product 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 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 household ventilation., Covers use at ambient temperatures.	
2.15 Contributing scenario	o controlling consumer e	exposure for: PC9c: Finger paints
Deschart de servicities	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
		0.40 D
	Vapour pressure	240 hPa



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Amount used	Amount used per event	1,35 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 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%
	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
	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 exposure	Covers use in a one car ga	arage (34 m3) under typical ventilation.
	controlling consumer e	exposure for: PC24: Pastes
	Concentration of the Substance in	Covers concentrations up to 20%
Product characteristics	Mixture/Article Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	34 g
	Exposure duration	8 h
Frequency and duration of use	Frequency of use	10 days/year
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	Executed to a	1 Times new day	
Human factors not influenced by	Frequency of use	1 Times per day	
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 ambien temperatures.		
2.18 Contributing scenario	controlling consumer e	exposure for: PC24: Sprays	
	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	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 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	
	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	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 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	
2.20 Contributing scenario	controlling consumer e	exposure for: PC35: Cleaners, liquids (all	
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	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
	Exposure duration	0,33 h
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 exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.21 Contributing scenario	o controlling consumer e	exposure for: PC38
	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
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	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	Room size	20 m3
conditions affecting consumers	ners Covers use under typical household ventilation., Covers use at ambient temperatures.	

Environment

No information available.



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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

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.

For scaling see ECT Tool:

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

Health

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.

Risk characterization ratios (RCRs) were calculated by comparing the predicted exposure levels with the corresponding DNELs (derived no effect levels) (RCR = exposure level/DNEL)



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		ers and release agents	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC2: Use in closed, co PROC3: Use in closed ba PROC4: Use in batch and exposure arises PROC5: Mixing or blendin and articles (multistage ar PROC6: Calendering ope PROC7: Industrial sprayin PROC8a: Transfer of sub vessels/large containers a PROC8b: Transfer of sub vessels/large containers a PROC9: Transfer of subs filling line, including weigh PROC10: Roller applicatio	erations ng ostance or preparation (charging/discharging) from/to at non-dedicated facilities ostance or preparation (charging/discharging) from/to at dedicated facilities stance or preparation into small containers (dedicated ing)	
Environmental Release Categories	ERC5: Industrial use resu	Iting in inclusion into or onto a matrix	
2.1 Contributing scenario co	ntrolling environmenta	Il exposure for: ERC5	
Substance is a unique structure, F	Readily biodegradable.	Il exposure for: ERC5	
Substance is a unique structure, F Amount used	Readily biodegradable. 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	Readily biodegradable.	al exposure for: ERC5	
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 measures to reduce or limit	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 Air	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	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Air Common practices vary a	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 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 Air Common practices vary a estimates used.	360 days/year 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 vaste in accordance with environmental legislation and	
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	Readily biodegradable. To be defined by site Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary a estimates used. Contain and dispose of w according to local regulat	360 days/year 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 vaste in accordance with environmental legislation and	
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 a estimates used. Contain and dispose of w according to local regulat If recycling is not practica	360 days/year 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 vaste in accordance with environmental legislation and ions.	



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PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, 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
	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. 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	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.(PROC7)	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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



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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
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 Sc	1. Short title of Exposure Scenario 16: 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	3	
Conditions and measures related to external treatment of waste for	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.	
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disposal Conditions and measures related			
to external recovery of waste			
2.2 Contributing scenario co PROC5, PROC6, PROC8a		re for: PROC1, PROC2, PROC3, PROC4, C10, 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.	f general ventilation. Natural ventilation is from doors ntilation means air is supplied or removed by a	
	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)		
	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)		
Technical conditions and	Ensure operation is undertaken outdoors.		
measures to control dispersion	or Avoid carrying out operation for more than 4 hours.(PROC6)		
	Ensure material transfers are under containment or extract ventilation.		
	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 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		
	Avoid carrying out operation for more than 1 hour.(PROC11)		
Conditions and measures related	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		
to personal protection, hygiene and health evaluation		tional control measures are not feasible, then adopt	
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)		



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Environment

No information available.

~ ~

Workers

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 Inhalation 250ppm 0,50 PROC5 Dermal 6,86mg/kg/day 0,04 PROC5 Dermal 0,07mg/kg/day 0,00 PROC5, Outdoor use., 30% Inhalation 350ppm 0,70 PROC5, Outdoor use., 30% Inhalation 300ppm 0,60 PROC6, Dermal 13,71mg/kg/day 0,77 PROC6, Outdoor use., 30% Inhalation 420ppm 0,84 PROC6 Dermal 27,43mg/kg/day 0,50 PROC6 Dermal 0,14mg/kg/day 0,50 PROC6 Dermal 0,14mg/kg/day 0,50 PROC8a -	Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2 Inhalation 50pm 0,10 PROC2 Dermal 1,37mg/kg/day 0,01 PROC3 Dermal 1,37mg/kg/day 0,01 PROC3 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 Dermal 0,07mg/kg/day 0,07 PROC5 Dermal 13,71mg/kg/day 0,07 PROC5 Dermal 13,71mg/kg/day 0,07 PROC6 Dermal 13,71mg/kg/day 0,60 PROC6 Dermal 27,43mg/kg/day 0,15 PROC6 Dermal 0,14mg/kg/day 0,001 PROC6 Dermal 13,71mg/kg/day 0,50 PROC6 Dermal	PROC1		Inhalation	0,01ppm	0,00002
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 Dermal 0,07mg/kg/day 0,00 PROC5 Dermal 0,07mg/kg/day 0,07 PROC5, PROC5, PROC8a Outdoor use., 30% efficiency Inhalation 300ppm 0,60 PROC6, PROC6 Outdoor use., 30% efficiency Inhalation 300ppm 0,60 PROC6 Dermal 27,43mg/kg/day 0,15 PROC6 Dermal 0,14mg/kg/day 0,001 PROC8a Dermal 0,14mg/kg/day 0,001 PROC6 Dermal 360ppm 0,72 PROC8a Dermal 0,14mg/kg/day 0,50 <t< td=""><td>PROC1, PROC3</td><td></td><td>Dermal</td><td>0,34mg/kg/day</td><td>0,002</td></t<>	PROC1, PROC3		Dermal	0,34mg/kg/day	0,002
PROC3, PROC8b Inhalation 100ppm 0,20 PROC8b Inhalation 250ppm 0,50 PROC4 Dermal 6,86mg/kg/day 0,04 PROC5 Dermal 0,07mg/kg/day 0,00 PROC5 Dermal 0,07mg/kg/day 0,00 PROC5 Dermal 0,07mg/kg/day 0,07 PROC5, PROC8a Outdoor use., 30% efficiency Inhalation 350ppm 0,70 PROC5, PROC6a during 1 - 4 hours Inhalation 300ppm 0,60 PROC6 Dermal 27,43mg/kg/day 0,15 PROC6 Dermal 0,14mg/kg/day 0,14 PROC6 Dermal 0,14mg/kg/day 0,001 PROC8a Dermal 0,14mg/kg/day 0,50 PROC8a Dermal 0,14mg/kg/day 0,50 PROC8a Dermal 0,50 ppm 0,50 <t< td=""><td>PROC2</td><td></td><td>Inhalation</td><td>50ppm</td><td>0,10</td></t<>	PROC2		Inhalation	50ppm	0,10
PROC8bInnalation100ppm0,20PROC4Inhalation250ppm0,50PROC4Dermal6,86mg/kg/day0,04PROC5Dermal0,07mg/kg/day0,00PROC5,Outdoor use., 30% efficiencyInhalation350ppm0,70PROC5, PROC6aDermal13,71mg/kg/day0,07PROC5, PROC6aDermal13,71mg/kg/day0,07PROC6Dermal300ppm0,60PROC6Outdoor use., 30% efficiencyInhalation300ppm0,84PROC6Outdoor use., 30% efficiencyInhalation420ppm0,84PROC6Dermal27,43mg/kg/day0,15PROC6Dermal0,14mg/kg/day0,001PROC8Dermal0,14mg/kg/day0,50PROC8Dermal13,71mg/kg/day0,50PROC8Dermal6,86mg/kg/day0,04PROC8Dermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007	PROC2		Dermal	1,37mg/kg/day	0,01
PROC4Dermal6,86mg/kg/day0,04PROC5Dermal0,07mg/kg/day0,00PROC5,Outdoor use., 30% efficiencyInhalation350ppm0,70PROC5,Dermal13,71mg/kg/day0,07PROC5,Dermal13,71mg/kg/day0,07PROC5,Dermal300ppm0,60PROC5,during 1 - 4 hoursInhalation300ppm0,60PROC6Outdoor use., 30% efficiencyInhalation420ppm0,84PROC6Dermal27,43mg/kg/day0,15PROC6Dermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,001PROC6Dermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,001PROC8bDermal6,86mg/kg/day0,04PROC9Dermal6,86mg/kg/day0,04PROC9Dermal6,86mg/kg/day0,04PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal0,007PROC10Dermal0,007PROC10Dermal0,007PROC10Dermal0,007PROC10Dermal0,007PROC10<			Inhalation	100ppm	0,20
PROC5Dermal0,07mg/kg/day0,00PROC5, PROC8aOutdoor use., 30% efficiencyInhalation350ppm0,70PROC5, PROC8aDermal13,71mg/kg/day0,07PROC5, PROC8aDermal13,71mg/kg/day0,07PROC5, PROC8aduring 1 - 4 hoursInhalation300ppm0,60PROC6Outdoor use., 30% efficiencyInhalation420ppm0,84PROC6Dermal27,43mg/kg/day0,15PROC6Dermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,001PROC8aDermal13,71mg/kg/day0,50PROC8aDermal0,14mg/kg/day0,001PROC8aDermal6,86mg/kg/day0,04PROC8bInhalation250ppm0,50PROC8bDermal6,86mg/kg/day0,04PROC9Dermal6,86mg/kg/day0,04PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,60	PROC4		Inhalation	250ppm	0,50
PROC5, PROC8aOutdoor use., 30% efficiencyInhalation350ppm0,70PROC5, PROC8aDermal13,71mg/kg/day0,07PROC5, PROC8aduring 1 - 4 hoursInhalation300ppm0,60PROC6Outdoor use., 30% efficiencyInhalation420ppm0,84PROC6Dermal27,43mg/kg/day0,15PROC6Dermal27,43mg/kg/day0,15PROC6Dermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,50PROC8bDermal13,71mg/kg/day0,50PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC10Dermal6,86mg/kg/day0,04PROC10Dermal100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,60	PROC4		Dermal	6,86mg/kg/day	0,04
PROC8aefficiencyInhalation350ppm0,70PROC5, PROC8aDermal13,71mg/kg/day0,07PROC5, PROC8aduring 1 - 4 hoursInhalation300ppm0,60PROC6Outdoor use., 30% efficiencyInhalation420ppm0,84PROC6Dermal27,43mg/kg/day0,15PROC6Dermal360ppm0,72PROC6during 1 - 4 hoursInhalation360ppm0,72PROC8aDermal0,14mg/kg/day0,001PROC8aDermal13,71mg/kg/day0,50PROC8aDermal50ppm0,50PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC10half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal6,86mg/kg/day0,007	PROC5		Dermal	0,07mg/kg/day	0,00
PROC8aImage: Constraint of the constraint of the constraint of the constraint of the constraint of substance in product: 5%InhalationImage: Constraint of the constraint of substance in product: 5%InhalationImage: Constraint of the constraint of substance in product: 5%InhalationImage: Constraint of the constra	PROC5, PROC8a		Inhalation	350ppm	0,70
PROC8aduring 1 - 4 hoursInitialitionSouppin0,60PROC6Outdoor use., 30% efficiencyInhalation420ppm0,84PROC6Dermal27,43mg/kg/day0,15PROC6during 1 - 4 hoursInhalation360ppm0,72PROC8aDermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,50PROC8aDermal13,71mg/kg/day0,50PROC8bInhalation250ppm0,50PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC10Dermal100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal0,90ppm0,60			Dermal	13,71mg/kg/day	0,07
PROC6efficiencyInitialation420ppm0,04PROC6Dermal27,43mg/kg/day0,15PROC6during 1 - 4 hoursInhalation360ppm0,72PROC8aDermal0,14mg/kg/day0,001PROC8aDermal0,14mg/kg/day0,50PROC8bInhalation250ppm0,50PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC10Dermal100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal300ppm0,60		during 1 - 4 hours	Inhalation	300ppm	0,60
PROC6during 1 - 4 hoursInhalation360ppm0,72PROC8aDermal0,14mg/kg/day0,001PROC8aDermal13,71mg/kg/day0,50PROC8bInhalation250ppm0,50PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC9Dermal6,86mg/kg/day0,04PROC10Dermal100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,00ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal0,60300ppm0,60	PROC6		Inhalation	420ppm	0,84
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 PROC8b Dermal 6,86mg/kg/day 0,04 PROC9 Inhalation 250ppm 0,50 PROC9 Dermal 6,86mg/kg/day 0,04 PROC9 Dermal 6,86mg/kg/day 0,04 PROC10 half mask Inhalation 100ppm 0,20 PROC10 Dermal 1,37mg/kg/day 0,007 PROC10 Dermal 1,37mg/kg/day 0,60	PROC6		Dermal	27,43mg/kg/day	0,15
PROC8aDermal13,71mg/kg/day0,50PROC8bInhalation250ppm0,50PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC9Dermal6,86mg/kg/day0,04PROC9Dermal100ppm0,20PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal300ppm0,60	PROC6	during 1 - 4 hours	Inhalation	360ppm	0,72
PROC8bInhalation250ppm0,50PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC9Dermal6,86mg/kg/day0,04PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal0,60	PROC8a		Dermal	0,14mg/kg/day	0,001
PROC8bDermal6,86mg/kg/day0,04PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,37mg/kg/day0,007PROC10Dermal1,300ppm0,60	PROC8a		Dermal	13,71mg/kg/day	0,50
PROC9Inhalation250ppm0,50PROC9Dermal6,86mg/kg/day0,04PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007PROC10Dermal300ppm0,60	PROC8b		Inhalation	250ppm	0,50
PROC9Dermal6,86mg/kg/day0,04PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007during 1 - 4 hours, Concentration of substance in product: 5%Inhalation300ppm0,60	PROC8b		Dermal	6,86mg/kg/day	0,04
PROC11half maskInhalation100ppm0,20PROC10Dermal1,37mg/kg/day0,007during 1 - 4 hours, Concentration of substance in product: 5%Inhalation300ppm0,60	PROC9		Inhalation	250ppm	0,50
PROC10 Dermal 1,37mg/kg/day 0,007 during 1 - 4 hours, Concentration of substance in product: 5% Inhalation 300ppm 0,60	PROC9		Dermal	6,86mg/kg/day	0,04
PROC10 during 1 - 4 hours, Concentration of substance in product: 5% Inhalation 300ppm 0,60	PROC11	half mask	Inhalation	100ppm	0,20
PROC10 Concentration of substance in product: 5% Inhalation 300ppm 0,60	PROC10		Dermal	1,37mg/kg/day	0,007
	PROC10	Concentration of substance in product: 5%	Inhalation	300ppm	0,60
PROC10 Concentration of Dermal 16,46mg/kg/day 0,09	PROC10	Concentration of	Dermal	16,46mg/kg/day	0,09



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	substance in product: 5% - 25%			
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
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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 17: 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 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 indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

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		
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,	
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	liquid	
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	use)				
	Vapour pr	essure	> 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			/).	
	Provide a windows e powered f	etc. Controlled	of general ve ventilation me	entilation. Natural ventila eans air is supplied or re	
				tem to avoid exposure. tem.(PROC1, PROC2)	
				ontainment or extract ve	ntilation.
Technical conditions and	Ensure op	peration is unde	ertaken outdo	ors.(PROC8a)	
measures to control dispersion from source towards the worker				than 4 hours.(PROC8a)	
	Ensure m or	aterial transfers	are under c	ontainment or extract ve	ntilation.
	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)			than 1 hour.(PROC19)		
				ted to EN374) in combin	ation with 'basic'
Conditions and measures related to personal protection, hygiene		echnical/organi	sational cont	rol measures are not fea	sible, then adopt
and health evaluation				10 with Type A filter or be	
	following	PPE:		rol measures are not fea	sible, then adopt
	Limit the substance content in the mixture to 25 %. Wear suitable gloves tested to EN374.(PROC19)				
		<u> </u>			
3. Exposure estimation and	reference	e to its sourc	е		
Environment					
No information available.					
Workers					
ECETOC TRA					
Contributing Specific con	ditions	Exposur	routes	Level of Exposure	BCB

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
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	Dermal	1,37mg/kg/day	0,01
	Inhalation	250ppm	0,50
	Dermal	6,86mg/kg/day	0,04
with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
	Dermal	0,14mg/kg/day	0,001
Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
	Dermal	13,71mg/kg/day	0,07
during 1 - 4 hours	Inhalation	300ppm	0,60
during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
	Dermal	2,14mg/kg/day	0,01
during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
	Dermal	107,14mg/kg/day	0,58
half mask	Inhalation	100ppm	0,20
Concentration of substance in product: 5% - 25%	Dermal	16,97mg/kg/day	0,09
Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
	with local exhaust ventilation, 80% efficiency Outdoor use., 30% efficiency Outdoor use., 30% efficiency during 1 - 4 hours during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency Concentration of substance in product: 5% - 25% half mask Concentration of substance in product: 5% - 25% half mask Concentration of substance in product: 5% - 25% half mask Concentration of substance in product: 5% - 25%	InhalationDermalwith local exhaust ventilation, 80% efficiencyInhalationDermalOutdoor use., 30% efficiencyInhalationDermalOutdoor use., 30% efficiencyInhalationduring 1 - 4 hoursInhalationduring 15 mins - 1 hour, with local exhaust ventilation, 80% efficiencyInhalationduring 1 - 4 hoursInhalationduring 1 - 4 hours, concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiencyInhalationConcentration of substance in product: 5% - 25%DermalDermalhalf maskInhalationConcentration of substance in product: 5% - 25%DermalDermalhalf maskInhalationConcentration of substance in product: 5% - 25%DermalDermalhalf maskInhalationConcentration of substance in product: 5% - 25%Dermal	Inhalation 250ppm Dermal 6,86mg/kg/day with local exhaust ventilation, 80% efficiency Inhalation 100ppm Dermal 0,14mg/kg/day Outdoor use., 30% efficiency Inhalation 350ppm Dermal 13,71mg/kg/day during 1 - 4 hours Inhalation 300ppm during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency Inhalation 200ppm Dermal 2,14mg/kg/day during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency Inhalation 252ppm Concentration of substance in product: 5% - 25% Dermal 64,28mg/kg/day Dermal 107,14mg/kg/day Dermal 100ppm

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. 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

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.

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

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

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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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 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	leadily 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		
	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 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	Use suitable eye protection	l.		
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to personal protection, hygiene and health evaluation

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

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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 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 PROC19: Hand-mixing with intimate contact and only PPE available
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a

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 Organizational measures to	Common practices vary ac estimates used.	ross sites thus conservative process release	
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	
	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.		
	Ensure material transfers a	re under containment or extract ventilation.	
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	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)
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:
	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

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

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.

For scaling see ECT Tool:

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

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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.

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

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

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 20: Use as blowing 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) PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC12: use of blowing agents in manufacture of foam
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC10a

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, PROC8b, PROC9, PROC12			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	

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liquid

Physical Form (at time of

use)



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	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 workerLocate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from windows etc. Controlled ventilation means air is supplied or removed by powered fan.Sample via a closed loop or other system to avoid exposure.		general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a
Conditions and measures related to personal protection, hygiene and health evaluationUse suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combin employee training.		l.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

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.

For scaling see ECT Tool:

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

Health



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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.

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

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

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 21: Use in de-icing 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 outdoor use of processing aids in open systems	

2.1 Contributing scenario controlling environmental exposure for: ERC8d

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 co PROC19	ntrolling worker exposu	re for: PROC1, PROC2, PROC8b, PROC11,	
Due doot ale na staniation	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	Locate bulk storage outdoors.		
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measures to control dispersion	Provide a good standard of general ventilation. Natural ventilation is from doors,		
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)		
	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)		
	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

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
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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%	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

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.

For scaling see ECT Tool:

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

Health

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.

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

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

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 22: Use in de-icing and anti-icing applications

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC4: Anti-freeze and de-icing products		
Environmental Release Categories	ERC8d: Wide dispersive outdoor use of processing aids in open systems		

2.1 Contributing scenario controlling environmental exposure for: ERC8d

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 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		
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 expo	osure for: PC4: Washing car window	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product 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	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
Other given operational	Room size	34 m3	
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conditions affecting consumers exposure

Covers use in a one car garage (34 m3) under typical ventilation.

exposure	l		
2.3 Contributing scenario co	ntrolling consumer expo	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	
		1	
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 garage (34 m3) under typical ventilation.		
2.4 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 risk management	Exposed skin areas	Covers skin contact area up to 214,4 cm ²	
Other given operational conditions affecting consumers	Room size	34 m3	

3. Exposure estimation and reference to its source

Environment

No information available.



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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

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.

For scaling see ECT Tool:

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

Health

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.

Risk characterization ratios (RCRs) were calculated by comparing the predicted exposure levels with the corresponding DNELs (derived no effect levels) (RCR = exposure level/DNEL)



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1. Short title of Exposure Scenario 23: 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 processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

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 co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid



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Vapour pressure	> 10 kPa
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)	
 Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. 	
	Covers daily exposures up Locate bulk storage outdoo Provide a good standard of windows etc. Controlled ve powered fan. Sample via a closed loop o Handle substance within a Use suitable eye protection Wear chemically resistant g

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

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.

For scaling see ECT Tool:

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

Health

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may

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be necessary to define appropriate site-specific risk management measures. For scaling see: GES Worker Chemical Safety Assessment (CSA) Template

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

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 24: 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 outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8d

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 co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid

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Vapour pressure	> 10 kPa
Covers daily exposures up	to 8 hours (unless stated differently).
Provide a good standard of	ors. f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a
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 underta	aken outdoors.(PROC8a)
or Avoid carrying out operation for more than 4 hours.(PROC8a)	
Use suitable eye protection.	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
	Covers daily exposures up Locate bulk storage outdoo Provide a good standard of windows etc. Controlled ve powered fan. Sample via a closed loop o Handle substance within a Ensure material transfers a or Ensure operation is underta or Avoid carrying out operatio Use suitable eye protectior Wear chemically resistant g

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TR	A			
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	100ppm	0,20
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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. For scaling see ECT Tool: ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-reachconsortium/phenol-derivatives-dossiers.aspx Health

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.

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

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

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 25: Explosives manufacture & 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 outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8d

Substance is a unique structure, Readily biodegradable.

To be defined by site	
Continuous exposure	360 days/year
Indoor/Outdoor use.	
Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
Air	Closed system, or, Treated by scrubbers
Air	or, Charcoal adsorbers
Common practices vary across sites thus conservative process release estimates used.	
Contain and dispose of waste in accordance with environmental legislation and according to local regulations.	
If recycling is not practicable, dispose of in compliance with local regulations.	
ntrolling worker exposu	re for: PROC1, PROC3, PROC5, PROC8a,
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
	Continuous exposure Indoor/Outdoor use. Air Air Air Common practices vary ac estimates used. Contain and dispose of wa according to local regulation If recycling is not practicab ntrolling worker exposu Concentration of the Substance in Mixture/Article Physical Form (at time of use)

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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.
Technical conditions and measures to control dispersion	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC3)
from source towards the worker	Ensure material transfers are under containment or extract ventilation.
	or France anarchian is undertaken autobarn (PROCE, PROCEs)
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)
	or
	Avoid carrying out operation for more than 4 hours. (PROC5, 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

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



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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. For scaling see ECT Tool: ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivatives-

reachconsortium/phenol-derivatives-dossiers.aspx

Health

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.

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

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

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 26: 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 PROC9b: 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, pelettisation 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 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 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	Contain and dispose of waste in accordance with environmental legislation and		
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to external treatment of waste for disposal	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, 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	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

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
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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
PROC14, PROC15	 Dermal	0,34mg/kg/day	0,00

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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.

For scaling see ECT Tool:

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

Health

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.

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

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

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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