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

ACETONE

Version 6.2 Print Date 2014/01/23

Revision date / valid from 2014/01/23 **MSDS code: MACE001**

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

1.1. Product identifier

Trade name	:	ACETONE
Substance name	:	acetone
Index-No.	:	606-001-00-8
CAS-No.	:	67-64-1
EC-No.	:	200-662-2
Registration number	:	01-2119471330-49-xxxx

1.2. Relevant identified uses 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

1.3. Details of the supplier of the safety data sheet

Company	:	Brenntag UK & Ireland Albion House, Rawdon Park GB LS19 7XX Leeds Yeadon
Telephone	:	+44 (0) 113 3879 200
Telefax	:	+44 (0) 113 3879 280
E-mail address	:	msds@brenntag.co.uk

1.4. Emergency telephone number

Emergency telephone number	:	Emergency only telephone number (open 24 hours): +44 (0) 1865 407333 (N.C.E.C. Culham)

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

Serious eye damage/eye irritation	Category 2	---	H319
Specific target organ toxicity - single exposure	Category 3	---	H336

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

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Directive 67/548/EEC or 1999/45/EC	
Hazard symbol / Category of danger	**Risk phrases**
Highly flammable (F)	R11
Irritant (Xi)	R36
	R66
	R67

For the full text of the R-phrases 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 for physicochemical information.

Potential environmental effects : See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols :

Signal word : Danger

Hazard statements :

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements

Prevention :

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.

		P243	Take precautionary measures against static discharge.
		P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	:	P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
		P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Storage	:	P403 + P235	Store in a well-ventilated place. Keep cool.

Additional Labelling:

EUH066 Repeated exposure may cause skin dryness or cracking.

Hazardous components which must be listed on the label:

• acetone

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

Section 3: Composition/information on ingredients

3.1. Substances

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)		Classification (67/548/EEC)
		Hazard class / Hazard category	Hazard statements	
acetone Index-No. : 606-001-00-8 CAS-No. : 67-64-1 EC-No. : 200-662-2 Registration : 01-2119471330-49-xxxx C&L-No. : 02-2119752542-40-0000	<= 100	Flam. Liq.2 Eye Irrit.2 STOT SE3	H225 H319 H336	Highly flammable; F; R11 Irritant; Xi; R36 R66 R67

For the full text of the R-phrases mentioned in this Section, see Section 16.
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 inhaled	: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position and seek medical advice.
In case of skin contact	: Wash off immediately with soap and plenty of water. Call a physician if irritation persists.
In case of eye contact	: Consult an eye specialist immediately. Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting - seek medical advice. If a person vomits when lying on his back, place him in the recovery position.

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

Symptoms	: No information available.
Effects	: No information available.

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

Treatment	: Treat symptomatically.No further information available.

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

Specific hazards during firefighting	:	Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Flash back possible over considerable distance. In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, Carbon dioxide (CO2)

5.3. Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.Wear appropriate body protection (full protective suit)
Further information	:	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	:	Use personal protective equipment. Keep away unprotected persons. Provide adequate ventilation. Keep away from heat and sources of ignition. Avoid contact with skin and eyes. Do not breathe vapours or spray mist. For personal protection see section 8.

6.2. Environmental precautions

Environmental precautions	:	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.

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 local / national regulations (see section 13).
Further information	:	Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

For personal protection see section 8.

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 the skin and the eyes. 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. Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep in an area equipped with solvent resistant flooring. Suitable materials for containers: Mild steel; Stainless steel; polyethylene

Advice on protection against fire and explosion	:	Combustible liquid; Keep away from sources of ignition - No smoking. Use only explosion-proof equipment. Vapours are heavier than air and may spread along floors. 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 away from heat. Keep in a well-ventilated place.
Advice on common storage	:	Keep away from food, drink and animal feedingstuffs. Incompatible with oxidizing agents.
German storage class	:	3 Flammable Liquids

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

8.1. Control parameters

Component: acetone	CAS-No. 67-64-1
Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)	

DNEL
Workers, Systemic effects, Skin contact
Long-term exposition : 186 mg/kg bw/day

DNEL
Workers, Systemic effects, Inhalation
Long-term exposition : 1210 mg/m3

DNEL
Workers, Local effects, Inhalation
Short-term exposition : 2420 mg/m3

DNEL
Consumers, Systemic effects, Skin contact
Long-term exposition : 62 mg/kg bw/day

DNEL
Consumers, Systemic effects, Inhalation
Long-term exposition : 200 mg/m3

DNEL

Consumers, Systemic effects, Ingestion Long-term exposition	:	62 mg/kg bw/day

Predicted No Effect Concentration (PNEC)

Fresh water	:	10.6 mg/l
Marine water	:	1.06 mg/l
Intermittent releases	:	21 mg/l
Sewage treatment plant (STP)	:	100 mg/l
Fresh water sediment	:	30.4 mg/kg
Marine sediment	:	3.04 mg/kg
Soil	:	29.5 mg/kg

Other Occupational Exposure Limit Values

EU ELV, Time Weighted Average (TWA):
500 ppm, 1,210 mg/m3
Indicative

EH40 WEL, Time Weighted Average (TWA):
500 ppm, 1,210 mg/m3

EH40 WEL, Short Term Exposure Limit (STEL):
1,500 ppm, 3,620 mg/m3

ELV (IE), Time Weighted Average (TWA):
500 ppm, 1,210 mg/m3
Indicative OELV

8.2. Exposure controls

Appropriate engineering controls
Refer to protective measures listed in sections 7 and 8.

Personal protective equipment
Respiratory protection

Advice	:	Required, if exposure limit is exceeded (e.g. OEL). In case of insufficient ventilation, wear suitable respiratory equipment. Breathing apparatus with filter. Recommended Filter type:AX

Hand protection

Advice	:	Wear suitable gloves. The glove material has to be impermeable and resistant to the product / the substance / the preparation. As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use. Protective gloves should be replaced at first signs of wear.
Material	:	butyl-rubber
Break through time	:	>= 4 h
Glove thickness	:	0.5 mm

Eye protection

Advice	:	Tightly fitting safety goggles

Skin and body protection

Advice	:	Solvent resistant protective clothing

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.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	:	liquid
Colour	:	colourless
Odour	:	sweet
Odour Threshold	:	ca. 13 ppm
pH	:	not applicable
Melting point/range	:	-94.7 °C
Boiling point/boiling range	:	55.8 - 56.6 °C
Flash point	:	-18 °C (closed cup
Evaporation rate	:	Currently we do not have any information from our supplier about this.

Flammability (solid, gas)	:	Currently we do not have any information from our supplier about this.
Upper explosion limit	:	13.0 %(V)
Lower explosion limit	:	2.1 %(V)
Vapour pressure	:	247 hPa (20 °C)
		812 hPa (50 °C)
Relative vapour density	:	2.0
Relative density	:	Currently we do not have any information from our supplier about this.
Density	:	0.791 g/cm3 (20 °C)
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	log Kow -0.24 (measured)
Auto-ignition temperature	:	465 °C
Thermal decomposition	:	Currently we do not have any information from our supplier about this.
Viscosity, dynamic	:	0.33 mPa.s (20 °C)
Explosive properties	:	EU legislation: Currently we do not have any information from our supplier about this.
Explosivity	:	Formation of explosive air/vapour mixtures is possible.
Oxidizing properties	:	Currently we do not have any information from our supplier about this.

9.2. Other information

Molecular weight	:	58.09 g/mol
Refractive index	:	1.358 - 1.359

Section 10: Stability and reactivity

10.1. Reactivity

Advice : No information available.

10.2. Chemical stability

Advice	:	No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

Hazardous reactions	:	No information available.

10.4. Conditions to avoid

Conditions to avoid	:	Keep away from heat and sources of ignition.
Thermal decomposition	:	Currently we do not have any information from our supplier about this.

10.5. Incompatible materials

Materials to avoid	:	strong reducing agents, Oxidizing agents, Halogenated compounds, Alkali metals, Ethanolamine, Hydrogen peroxide

10.6. Hazardous decomposition products

Hazardous decomposition products	:	Under fire conditions: Carbon oxides

Section 11: Toxicological information

11.1. Information on toxicological effects

Component:	**acetone**	**CAS-No. 67-64-1**
Acute toxicity		
Oral		
LD50	:	5800 mg/kg (rat) Cause pain in mouth and throat, nausea, vomiting, dizziness, headache and risk of unconsciousness.
Inhalation		
LC50	:	ca. 76 mg/l (rat; 4 h) May cause pain in nose and throat, nausea, dizziness, headache, deteriorate reactivity and at high concentration unconsciousness.
Dermal		
LD50	:	> 15800 mg/kg (rabbit)
Irritation		
Skin		

Result	:	Repeated exposure may cause skin dryness or cracking.

Eyes

Result	:	Irritating to eyes. (rabbit) May cause corneal damage.

Sensitisation

Result	:	not sensitizing (guinea pig)

CMR effects

CMR Properties

Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Mutagenicity	:	Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Reproductive toxicity	:	Animal testing did not show any effects on fertility.

Specific Target Organ Toxicity

Single exposure

remark	:	no data available

Repeated exposure

remark	:	no data available

Other toxic properties

Aspiration hazard

no data available

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.

Section 12: Ecological information

12.1. Toxicity

Component:	acetone	CAS-No. 67-64-1
Acute toxicity		
Fish		
LC50	: 5540 mg/l (Oncorhynchus mykiss; 96 h)	
LC50	: 11000 mg/l (Alburnus alburnus; 96 h)	
Toxicity to daphnia and other aquatic invertebrates		
LC50	: 8800 mg/l (Daphnia magna; 48 h)	
algae		
NOEC	: 430 mg/l (algae; 96 h)	
Chronic toxicity		
Aquatic invertebrates		
	2212 mg/l (Daphnia magna (Water flea); 8 d)	

12.2. Persistence and degradability

Component:	acetone	CAS-No. 67-64-1
Persistence and degradability		
Persistence		
Result	: no data available	
Biodegradability		
Result	: 84 % (Exposure Time: 20 d) Readily biodegradable	
Result	: 91 % (Exposure Time: 28 d)(OECD 301 B)	

12.3. Bioaccumulative potential

Component:	acetone	CAS-No. 67-64-1
Bioaccumulation		

Result	:	BCF: < 10 Does not bioaccumulate.

12.4. Mobility in soil

Component:	acetone	CAS-No. 67-64-1
Mobility		

: The product evapourates readily.

12.5. Results of PBT and vPvB assessment

Component:	acetone	CAS-No. 67-64-1
Results of PBT and vPvB assessment		

Result	:	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6. Other adverse effects

Component:	acetone	CAS-No. 67-64-1
Biochemical Oxygen Demand (BOD)		

Result	:	1900 mg/g (Incubation time: 5 d)

Chemical Oxygen Demand (COD)		
Result	:	2100 mg/g

Additional ecological information		
Result	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

Section 13: Disposal considerations

13.1. Waste treatment methods

Product	:	Disposal together with normal waste is not allowed. Special

		disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.
Contaminated packaging	:	Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Do not burn, or use a cutting torch on, the empty drum. Risk of explosion.
European Waste Catalogue Number	:	No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

Section 14: Transport information

14.1. UN number

1090

14.2. UN proper shipping name

ADR : ACETONE
RID : ACETONE
IMDG : ACETONE

14.3. Transport hazard class(es)

ADR-Class	: 3
(Labels; Classification Code; Hazard identification No; Tunnel restriction code)	3; F1; 33; (D/E)
RID-Class	: 3
(Labels; Classification Code; Hazard identification No)	3; F1; 33
IMDG-Class	: 3
(Labels; EmS)	3; F-E, S-D

14.4. Packaging group

ADR : II
RID : II
IMDG : II

14.5. Environmental hazards

Labeling according to 5.2.1.8 ADR	: no
Labeling according to 5.2.1.8 RID	: no
Labeling according to 5.2.1.6.3 IMDG	: no
Classification as environmentally hazardous according to 2.9.3 IMDG	: no

Classified as “P” according to 2.10 IMDG : no

14.6. Special precautions for user

Note : not applicable

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

IMDG : Not applicable.

Section 15: Regulatory information

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

acetone

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC)
Listed Point Nos.: 40

EU. Regulation 273/2004, Drug Precursors, Category 3 Scheduled substance Combined Nomenclature (CN) denomination. Scheduled substance Combined Nomenclature (CN) code: 2914 11 00

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC)
Listed Point Nos.: 40

EU. Regulation 273/2004, Drug Precursors, Category 3 Scheduled substance Combined Nomenclature (CN) denomination. Scheduled substance Combined Nomenclature (CN) code: 2914 11 00

:

Notification status

acetone:

Regulatory List	Notification	Notification number
AICS	YES	
DSL	YES	
INV (CN)	YES	
ENCS (JP)	YES	(2)-542
ISHL (JP)	YES	(2)-542
NZ CLSC	YES	
TSCA	YES	
EINECS	YES	200-662-2
KECI (KR)	YES	KE-29367
PICCS (PH)	YES	
IECSC	YES	

15.2. Chemical Safety Assessment

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

Section 16: Other information

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

R11	Highly flammable.
R36	Irritating to eyes.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

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

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Further information

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.

ACETONE

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7668
2	Rubber production and processing	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14	6d	NA	ES7680
3	Polymer production	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7682
4	Polymer production	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7741
5	Polymer processing	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7684
6	Polymer processing	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7743
7	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 19	4	NA	ES7672
8	Uses in coatings	21	NA	1, 4, 9a, 9b, 9c, 15, 24, 31	NA	8a, 8c, 8d, 8f	NA	ES8830
9	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
10	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 19	4	NA	ES7686
11	Use in Cleaning Agents	21	NA	3, 4, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES8831
12	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 19	8a, 8d	NA	ES7745
13	Use as binders and release agents	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13	5	NA	ES7678
14	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
15	Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13, 19	8a, 8d	NA	ES7749
16	Use in laboratories	3	NA	NA	10, 15, 19	4	NA	ES7670
17	Use in laboratories	22	NA	NA	10, 15, 19	8a	NA	ES7735

18	Use as blowing agents	3	NA	NA	1, 2, 3, 8b, 9, 12	4, 10a	NA	ES7690
19	Use in de-icing and anti-icing applications	21	NA	4	NA	8d	NA	ES8832
20	Use in de-icing and anti-icing applications	22	NA	NA	1, 2, 8b, 11, 19	8d	NA	ES7751
21	Use in Oil and Gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 8a, 8b	4	NA	ES7688
22	Use in Oil and Gas field drilling and production operations	22	NA	NA	1, 2, 3, 4, 8a, 8b	8d	NA	ES7747
23	Explosives manufacture & use	22	NA	NA	1, 3, 5, 8a, 8b	8d	NA	ES7753

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 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC14, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of	liquid

	use)	
	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.	

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
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.

1. Short title of Exposure Scenario 2: Rubber production and 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 PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelettisation	
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: ERC6a, ERC6b, ERC6c, 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14		
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 Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation	0.01ppm	0.00002
PROC1, PROC3	---	Dermal	0.34mg/kg/day	0.002
PROC2, PROC14	---	Inhalation	50ppm	0.10
PROC2	---	Dermal	1.37mg/kg/day	0.01
PROC3, PROC4	---	Inhalation	100ppm	0.20
PROC4, PROC9	---	Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a, PROC10, PROC13	---	Inhalation	250ppm	0.50
PROC5, PROC8a	---	Dermal	13.71mg/kg/day	0.07
PROC6, PROC10	---	Dermal	27.43mg/kg/day	0.15
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.

1. Short title of Exposure Scenario 3: 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 (source) to prevent release	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
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 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, 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.
	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, PROC13	---	Inhalation	250ppm	0.50
PROC5, PROC8a	---	Dermal	13.71mg/kg/day	0.07
PROC6, PROC10	---	Dermal	27.43mg/kg/day	0.15
PROC8b	---	Inhalation	150ppm	0.30
PROC8b	---	Dermal	6.86mg/kg/day	0.037
PROC9	---	Inhalation	200ppm	0.40
PROC13	---	Dermal	13.71mg/kg/day	0.074
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.

1. Short title of Exposure Scenario 4: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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).
	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)	

	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

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
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.

1. Short title of Exposure Scenario 5: 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.		
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 (source) to prevent release	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
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 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, 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.
	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, PROC8a	---	Dermal	13.71mg/kg/day	0.07
PROC6, PROC10	---	Dermal	27.43mg/kg/day	0.15
PROC5, PROC6, PROC8a, PROC10, PROC13	---	Inhalation	250ppm	0.50
PROC8b	---	Inhalation	150ppm	0.30
PROC8b	---	Dermal	6.86mg/kg/day	0.037
PROC9	---	Inhalation	200ppm	0.40
PROC13	---	Dermal	13.71mg/kg/day	0.074
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.

1. Short title of Exposure Scenario 6: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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).
	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)	

	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

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
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

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.

1. Short title of Exposure Scenario 7: 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 PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available	
Environmental Release Categories	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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
	Air	Charcoal adsorbers, or, Treated by scrubbers
	Air	or, Charcoal adsorbers
	Common practices vary across sites thus conservative process release estimates used.	
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and 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, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC19		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and	Locate bulk storage outdoors.	

measures to control dispersion from source towards the worker	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, 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, PROC15	---	Inhalation	50ppm	0.10
PROC2	---	Dermal	1.37mg/kg/day	0.01
PROC3, PROC4	---	Inhalation	100ppm	0.20
PROC4, PROC9	---	Dermal	6.86mg/kg/day	0.04
PROC5, PROC8a, PROC10, PROC13, PROC19	---	Inhalation	250ppm	0.50
PROC5, PROC8a, PROC13	---	Dermal	13.71mg/kg/day	0.07
PROC7	with local exhaust 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.

1. Short title of Exposure Scenario 8: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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: 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
Amount used	Amount used per event	9 g
Frequency and duration of use	Exposure duration	< 4 h
	Frequency of use	< 365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35.73 cm^2
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.3 Contributing scenario controlling consumer exposure for: PC1: Glues DIY-use (carpet glue, tile glue, wood parquet glue)		
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
Amount used	Amount used per event	6390 g
Frequency and duration of use	Exposure duration	6 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.4 Contributing scenario controlling consumer exposure for: PC1: Glue from spray		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%
	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	85.05 g
Frequency and duration of use	Exposure duration	4 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.5 Contributing scenario controlling consumer exposure for: PC4: Washing car window		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product 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
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	

2.6 Contributing scenario controlling consumer exposure 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
Frequency and duration of use	Exposure duration	0.17 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.7 Contributing scenario controlling consumer exposure 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
Frequency and duration of use	Exposure duration	0.25 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.8 Contributing scenario controlling consumer exposure 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 use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2760 g
Frequency and duration of use	Exposure duration	2.2 h
	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 428.75 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	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, PC15: Solvent rich, high solid, water borne paint		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	744 g
Frequency and duration of use	Exposure duration	2.2 h
	Frequency of use	6 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 482.75 cm²
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 exposure for: PC9a: Aerosol spray can, PC15: Aerosol spray can		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	215 g
Frequency and duration of use	Exposure duration	0.33 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.11 Contributing scenario controlling consumer exposure for: PC9a: Removers (paint-, glue-, wall paper-, sealant-remover), PC15: Removers (paint-, glue-, wall paper-, sealant remover)		
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	491 g
Frequency and duration of use	Exposure duration	2 h
	Frequency of use	3 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm²
Other given operational	Room size	20 m3

conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.12 Contributing scenario controlling consumer exposure for: PC9b: Fillers and putty		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	85 g
Frequency and duration of use	Exposure duration	4 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.13 Contributing scenario controlling consumer exposure for: PC9b: Plasters and floor equalizers		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	13800 g
Frequency and duration of use	Exposure duration	2 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	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
	Vapour pressure	240 hPa
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 cm²

Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than 5%
2.15 Contributing scenario controlling consumer exposure for: PC24: Sprays		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	73 g
Frequency and duration of use	Exposure duration	0.17 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.16 Contributing scenario controlling consumer exposure for: PC31: Polishes, spray (furniture, shoes)		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	142 g
Frequency and duration of use	Exposure duration	1.23 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

No exposure assessment presented for human health.

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

Exposure Scenario

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)

1. Short title of Exposure Scenario 9: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa

Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	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)
	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 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)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	If above technical/organisational control measures are not feasible, then adopt following PPE: Limit the substance content in the mixture to 25 %. Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation	0.01ppm	0.00002
PROC1, PROC3, PROC15	---	Dermal	0.34mg/kg/day	0.002
PROC2, PROC15	---	Inhalation	50ppm	0.10
PROC2	---	Dermal	1.37mg/kg/day	0.01
PROC3	---	Inhalation	100ppm	0.20
PROC4, PROC8b, PROC9, PROC13	---	Inhalation	250ppm	0.50

PROC4, PROC8b, PROC9	---	Dermal	6.86mg/kg/day	0.04
PROC5	---	Dermal	0.07mg/kg/day	0.00
PROC5, PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70
PROC5, PROC8a, PROC13	---	Dermal	13.71mg/kg/day	0.07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC8a	---	Dermal	0.14mg/kg/day	0.001
PROC10	---	Dermal	1.37mg/kg/day	0.007
PROC11	with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40
PROC11	---	Dermal	2.14mg/kg/day	0.01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0.50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64.28mg/kg/day	0.35
PROC11	---	Dermal	107.14mg/kg/day	0.58
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16.97mg/kg/day	0.09
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20
PROC11	half mask	Inhalation	100ppm	0.20
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.

1. Short title of Exposure Scenario 10: 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 (source) to prevent release	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
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 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, 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	Locate bulk storage outdoors. 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, 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, PROC8a, PROC10, PROC13, PROC19	---	Inhalation	250ppm	0.50
PROC5, PROC8a	---	Dermal	13.71mg/kg/day	0.07
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0.05
PROC7	---	Dermal	2.14mg/kg/day	0.01
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.

1. Short title of Exposure Scenario 11: 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.		
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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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 (aerosol sprays)		
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	0.1 g
Frequency and duration of use	Exposure duration	0.25 h
	Frequency of use	365 days/year
	Frequency of use	4 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.3 Contributing scenario controlling consumer exposure for: PC3: Aircare, continuous action		

(solid & liquid)		
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
Frequency and duration of use	Exposure duration	8 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.4 Contributing scenario controlling consumer exposure 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
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.5 Contributing scenario controlling consumer exposure 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
Frequency and duration of use	Exposure duration	0.17 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	

2.6 Contributing scenario controlling consumer exposure 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
Frequency and duration of use	Exposure duration	0.25 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.7 Contributing scenario controlling consumer exposure 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 use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2760 g
Frequency and duration of use	Exposure duration	2.2 h
	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 428.75 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.8 Contributing scenario controlling consumer exposure for: PC9a: Solvent rich, high solid, water borne paint		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	744 g
Frequency and duration of use	Exposure duration	2.2 h
	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 cm²
Other given operational conditions affecting consumers	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient	

exposure	temperatures.	
2.9 Contributing scenario controlling consumer 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 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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.10 Contributing scenario controlling consumer exposure for: PC9a: Removers (paint-, glue-, wall paper-, sealant-remover)		
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	491 g
Frequency and duration of use	Exposure duration	2 h
	Frequency of use	3 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.11 Contributing scenario controlling consumer exposure for: PC9b: Fillers and putty		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	85 g
Frequency and duration of use	Exposure duration	4 h
	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 cm²
Other given operational conditions affecting consumers	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient	

exposure	temperatures.	
2.12 Contributing scenario controlling consumer exposure for: PC9b: Plasters and floor equalizers		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	13800 g
Frequency and duration of use	Exposure duration	2 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.13 Contributing scenario controlling consumer exposure for: PC9b: Modelling clay		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%
	Physical Form (at time of use)	solid
Amount used	Amount used per event	1 g
Frequency and duration of use	Exposure duration	8 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	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
	Vapour pressure	240 hPa
Amount used	Amount used per event	1.35 g
Frequency and duration of use	Exposure duration	8 h
	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 cm²
Other given operational conditions affecting consumers	Room size	20 m3

exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Avoid using at a product concentration greater than 5%
2.15 Contributing scenario controlling consumer exposure for: PC24: Liquids		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 100%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2200 g
Frequency and duration of use	Exposure duration	0.17 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.16 Contributing scenario controlling consumer exposure for: PC24: Pastes		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	34 g
Frequency and duration of use	Exposure duration	8 h
	Frequency of use	10 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.17 Contributing scenario controlling consumer exposure for: PC24: Sprays		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	73 g
Frequency and duration of use	Exposure duration	0.17 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.18 Contributing scenario controlling consumer exposure for: PC35: Laundry and dish washing products

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	15 g
Frequency and duration of use	Exposure duration	0.5 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.19 Contributing scenario controlling consumer exposure for: PC35: Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners)

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	27 g
Frequency and duration of use	Exposure duration	0.33 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.20 Contributing scenario controlling consumer exposure for: PC38

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	12 g

Frequency and duration of use	Exposure duration	1 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

No exposure assessment presented for human health.

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

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)

1. Short title of Exposure Scenario 12: 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 (source) to prevent release	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
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 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, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, 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	Locate bulk storage outdoors. 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, 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)
	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 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)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	If above technical/organisational control measures are not feasible, then adopt following PPE: Limit the substance content in the mixture to 25 %. Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0.50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64.28mg/kg/day	0.35
PROC11	---	Dermal	107.14mg/kg/day	0.58
PROC11	---	Inhalation	300ppm	0.60
PROC11	half mask	Inhalation	100ppm	0.20
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.

1. Short title of Exposure Scenario 13: Use as binders and release 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) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring	
Environmental Release Categories	ERC5: Industrial use resulting in inclusion into or onto a matrix	
2.1 Contributing scenario controlling environmental exposure for: ERC5		
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 (source) to prevent release	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)
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 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, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion	Locate bulk storage outdoors. 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, 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
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.

1. Short title of Exposure Scenario 14: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid

	Vapour pressure	> 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.(PROC5, PROC8a)	
	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)	
	Ensure operation is undertaken outdoors. or Avoid carrying out operation for more than 4 hours.(PROC6)	
	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 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 to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)	

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, PROC8b	---	Inhalation	100ppm	0.20
PROC4	---	Inhalation	250ppm	0.50
PROC4	---	Dermal	6.86mg/kg/day	0.04
PROC5	---	Dermal	0.07mg/kg/day	0.00
PROC5, PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70

PROC5, PROC8a	---	Dermal	13.71mg/kg/day	0.07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC6	Outdoor use., 30% efficiency	Inhalation	420ppm	0.84
PROC6	---	Dermal	27.43mg/kg/day	0.15
PROC6	during 1 - 4 hours	Inhalation	360ppm	0.72
PROC8a	---	Dermal	0.14mg/kg/day	0.001
PROC8a	---	Dermal	13.71mg/kg/day	0.50
PROC8b	---	Inhalation	250ppm	0.50
PROC8b	---	Dermal	6.86mg/kg/day	0.04
PROC9	---	Inhalation	250ppm	0.50
PROC9	---	Dermal	6.86mg/kg/day	0.04
PROC11	half mask	Inhalation	100ppm	0.20
PROC10	---	Dermal	1.37mg/kg/day	0.007
PROC10	during 1 - 4 hours, Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0.60
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16.46mg/kg/day	0.09
PROC10	---	Dermal	27.43mg/kg/day	0.15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40
PROC11	---	Dermal	2.14mg/kg/day	0.01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 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:
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.

1. Short title of Exposure Scenario 15: Use in agrochemicals		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC4, PROC8a, PROC8b, PROC11, 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)	
	Ensure material transfers are under containment or extract ventilation.	

	or Ensure operation is undertaken outdoors.(PROC8a)
	or Avoid carrying out operation for more than 4 hours.(PROC8a)
	Ensure material transfers are under containment or extract ventilation. or Limit the substance content in the mixture to 25 %. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours.(PROC11)
	or Avoid carrying out operation for more than 1 hour.(PROC11)
	Avoid carrying out operation for more than 1 hour.(PROC19)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	If above technical/organisational control measures are not feasible, then adopt following PPE: Limit the substance content in the mixture to 25 %. Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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	0.01
PROC4, PROC8b, PROC13	---	Inhalation	250ppm	0.50
PROC4, PROC8b	---	Dermal	6.86mg/kg/day	0.04
PROC8a	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, PROC13	---	Dermal	13.71mg/kg/day	0.07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40

PROC11	---	Dermal	2.14mg/kg/day	0.01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0.50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64.28mg/kg/day	0.35
PROC11	---	Dermal	107.14mg/kg/day	0.58
PROC11	half mask	Inhalation	100ppm	0.20
PROC19	Concentration of substance in product: 5% - 25%	Dermal	16.97mg/kg/day	0.09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0.60

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

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.

1. Short title of Exposure Scenario 16: Use in laboratories		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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: PROC10, PROC15, PROC19		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	

3. Exposure estimation and reference to its source

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.

ACETONE

1. Short title of Exposure Scenario 17: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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: PROC10, PROC15, PROC19		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
	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)	
	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
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.

1. Short title of Exposure Scenario 18: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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).
	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.

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
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.

1. Short title of Exposure Scenario 19: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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: PC4: Washing car window		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product 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
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	
2.3 Contributing scenario controlling consumer exposure 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
Frequency and duration of use	Exposure duration	0.17 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	

2.4 Contributing scenario controlling consumer exposure 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
Frequency and duration of use	Exposure duration	0.25 h
	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 cm²
Other given operational conditions affecting consumers exposure	Room size	34 m3
	Covers use in a one car garage (34 m3) under typical ventilation.	

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

No exposure assessment presented for human health.

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

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)

1. Short title of Exposure Scenario 20: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC8b, PROC11, 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)	
	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)
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	If above technical/organisational control measures are not feasible, then adopt following PPE: Limit the substance content in the mixture to 25 %. Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation	0.01ppm	0.00002
PROC1	---	Dermal	0.34mg/kg/day	0.002
PROC2	---	Inhalation	50ppm	0.10
PROC2	---	Dermal	1.37mg/kg/day	0.10
PROC8b	---	Inhalation	250ppm	0.50
PROC8b	---	Dermal	6.86mg/kg/day	0.04
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40
PROC11	---	Dermal	2.14mg/kg/day	0.01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0.50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64.28mg/kg/day	0.35
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.

1. Short title of Exposure Scenario 21: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC8a, PROC8b		
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)	
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	---	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:
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.

1. Short title of Exposure Scenario 22: 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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC8a, PROC8b		
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.(PROC8a)	

	or Avoid carrying out operation for more than 4 hours.(PROC8a)
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	---	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

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.

1. Short title of Exposure Scenario 23: 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.		
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 (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	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.	
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, PROC3, PROC5, PROC8a, PROC8b		
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, 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)
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
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

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.