

ACETONE

Code : 10099

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

1.1. Product identifier

Chemical description : Acetone , 2-Propanone , Propan-2-one , Dimethyl ketone , DMK .
 Type of product : Pure product .
 Reach registration number : 01-2119471330-49

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

Identified use(s) : See table on the front page of the annex.
 * Use(s) advised against : This product is not recommended for any industrial, professional or consumer use other than identified in table on the front page of the annex.
 Not for use in ornamental articles, in tricks and jokes and in games (in accordance with Annex XVII to Regulation (EC) No 1907/2006) (3. Liquid substances or mixtures, which are regarded as dangerous according to the definitions in Council Directive 67/548/EEC and Directive 1999/45/EC).
 Not for use in aerosol dispensers for entertainment and decorative purposes (in accordance with Annex XVII to Regulation (EC) No 1907/2006) (40. Substances meeting the criteria of flammability in Directive 67/548/EEC and classified as flammable, highly flammable or extremely flammable regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not).

1.3. Details of the supplier of the safety data sheet

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

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

1.4. Emergency telephone number

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

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

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture


Classification according to Regulation (EC) No 1272/2008

Flammable liquids - Category 2 - Danger (Flam. Liq. 2; H225)
 Eye irritation - Category 2 - Warning (Eye Irrit. 2; H319)
 Specific Target Organ Toxicity - Single exposure - Narcotic effects - Category 3 - Warning (STOT SE 3; H336)

2.2. Label elements

Label in accordance with Regulation (EC) No 1272/2008

- Dangerous ingredient(s) : Acetone
- Hazard pictogram(s)



- Signal word : Danger
- Hazard statements : H225 - Highly flammable liquid and vapour. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness. EUH066 - Repeated exposure may cause skin dryness or cracking.

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SECTION 2. Hazards identification (continued)

• Precautionary statements

- * - Prevention : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P243 - Take precautionary measures against static discharge. P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- * - Response : P305+P351+P338 - IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 - If eye irritation persists: Get medical advice/attention.
- Storage : P403+P233 - Store in well-ventilated place. Keep container tightly closed.
- * - Disposal considerations : P501 - Dispose of contents and/or container to an approved waste disposal plant.

2.3. Other hazards

- Physical/chemical hazards : May form peroxides.
- Hazards for the health : A health dangerous concentration in the air will very quickly be reached by evaporation of this substance at app. 20°C; even faster by spraying.
- Hazards for the environment : No significant danger. This product is no substance or contains no PBT or vPvB (in accordance with Annex XIII).
- Hazards for the safety : Vapour may form explosive mixture with air.

SECTION 3. Composition/information on ingredients

3.1. Substances

Name component(s)	Weight %	CAS nr	EINECS nr	Index nr	Reach nr	CLASSIFICATION
Acetone	: 100 %	67-64-1	200-662-2	606-001-00-8	01-2119471330-49	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 EUH066

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

SECTION 4. First aid measures

4.1. Description of first aid measures

- General : In case of doubt or persistent symptoms, call a physician. Never give anything by mouth to an unconscious person.
- First Aid Measures
- Inhalation : Remove victim into fresh air. Allow the affected person to rest in semi-sitting position. If not breathing, give artificial respiration. Consult a doctor.
- Skin Contact : Consult doctor if irritation develops. Remove contaminated clothing. Rinse skin immediately with plenty of water. (shower if necessary).
- Eye Contact : Rinse immediately thoroughly and long (at least 15 min.) with plenty of water. Remove contact lenses. Consult eye doctor. Keep rinsing or dripping the eye during transport.
- Ingestion : DO NOT INDUCE VOMITING. Rinse mouth with water. Seek medical attention or take to hospital.

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

See section 11.

ACETONE**Code : 10099****SECTION 4. First aid measures (continued)****4.3. Indication of any immediate medical attention and special treatment needed**

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

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

Extinguishing Media

- Suitable : Extinguishing powder , Alcohol resistant foam , Carbon dioxide (CO₂) , Water spray .
- Not to be used : Heavy water stream .

5.2. Special hazards arising from the substance or mixture

Special Exposure Hazards : Fire may liberate carbon oxides (CO) and smoke.

5.3. Advice for firefighters

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

SECTION 6. Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Personal Precautions : Eliminate every possible source of ignition (open fire, sparks, smoking, ...).
Evacuate all personnel immediately and ventilate area.
Avoid breathing vapour and contact with skin, eyes and clothing. Wear recommended personal protective equipment. (See section 8)

6.2. Environmental precautions

Environmental Precautions : Shut off leaks if without risks.
Dike in the spilled product as much as possible with inert material.
Prevent entry of product in public water, sewers or soil.
Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for Cleaning Up : Collect the spillage in closable, suitable disposal containers.
Clean up any spills as soon as possible, using an inert absorbent material.
Residue is to be washed down with plenty of water.

6.4. Reference to other sections

For personal protection, see section 8.
For the removal of the waste product, see section 13.

SECTION 7. Handling and storage**7.1. Precautions for safe handling**

Handling : AVOID FOG TRANSFORMATION !
Avoid breathing vapour and contact with skin, eyes and clothing. Wear recommended personal protective equipment. (See section 8)
Wash hands before and after working with the product.
When using, do not eat, drink or smoke.
Emergency eye wash fountains and showers should be available in the immediate vicinity of any potential exposure.

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SECTION 7. Handling and storage (continued)
7.2. Conditions for safe storage, including any incompatibilities

- * Storage : Keep only in the original, safely locked container in a dry, cool, dark, well ventilated and fireproof place.
All dangerous products should be placed on a drip tray or should be barreled.
Store away from all heat sources, including direct sunlight.
Keep away from : Oxidizing agents , Bases , Amines .
- * Protection against Fire and Explosion : Remove all sources of ignition (open fire, sparks, smoking, ...).
With a temperature equal to or higher than the flash point, the mixture steam-air may create a highly flammable and explosive mixture.
Vapour is heavier than air and spreads along the ground with risk of ignition on distance.
Take measures against electrostatic discharges.
Do not use compressed air to either agitate or transfer contents of storage containers (tanks) / shipping drums containing this material.
Always use explosionproof electrical equipment.
- Packaging Material : Aluminium , Galvanised carbon steel , Stainless steel .
- Insuitable Packaging Material : Synthetic material , Rubber .

7.3. Specific end use(s)

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

SECTION 8. Exposure controls/personal protection
8.1. Control parameters

- * Occupational Exposure Limits : Acetone : Limit value (BE) : 500 ppm (1210 mg/m³) (2014)
Acetone : Short time value (BE) : 1000 ppm (2420 mg/m³) (2014)
Acetone : Limit value (TWA 8 h) (NL) : 510 ppm (1210 mg/m³) (2007)
Acetone : Limit value (TWA 15 min) (NL) : 1020 ppm (2420 mg/m³) (2007)
- Biological limit values : They will be included when available.
- DNELs :
 - Acetone : Worker, acute - local effects, inhalation : 2420 mg/m³
 - Acetone : Worker, long-term - systemic effects, inhalation : 1210 mg/m³
 - Acetone : Worker, long-term - systemic effects, dermal : 186 mg/kg bw/ day
 - Acetone : Consumer, long-term - systemic effects, inhalation : 200 mg/m³
 - Acetone : Consumer, long-term - systemic effects, dermal : 62 mg/kg bw/ day
 - Acetone : Consumer, long-term - systemic effects, oral : 62 mg/kg bw/ day
- * PNECs :
 - Acetone : Fresh water : 10,6 mg/l
 - Acetone : Marine water : 1,06 mg/l
 - Acetone : Fresh water sediment : 30,4 mg/kg
 - Acetone : Marine water sediment : 3,04 mg/kg
 - Acetone : Soil : 29,5 mg/kg
 - Acetone : Intermittent release : 21,5 mg/l
 - Acetone : Sewage treatment plant : 100 mg/l

8.2. Exposure controls

- Engineering Measures : Ventilation , Local exhaust .
- Personal Protection Equipment :
 - Respiratory protection : CE-approved respirator for low boiling organic vapours and solvents (Type AX, brown).
 - Skin protection : Suitable protective clothing .
- * - Hand protection : Suitable material for safety gloves (EN 374):
The suitability of the gloves and the breakthrough time for a specific workplace should be discussed with the producers of the protective gloves.
 - material : Butyl rubber
 - thickness : 0,5 mm
 - breakthrough time : > 480'

ACETONE**Code : 10099****SECTION 8. Exposure controls/personal protection (continued)**

- Eye/Face protection : Closed safety glasses or face shield.
Environmental exposure controls : See sections 6, 7, 12 and 13.

SECTION 9. Physical and chemical properties**9.1. Information on basic physical and chemical properties**

- Physical State (20°C) : Liquid .
Form/Colour : Clear , Colourless .
Odour : Aromatic odour .
* Odour threshold : 19,8 ppm
* pH value : 7 (10 g/l)
Melting/Freezing point : -94,7 °C
Boiling Point/Range (1013 hPa) : 56 °C
Flash point : -17 °C
Evaporation rate : 2 (Ether = 1)
5,6 - 14,4 (n-Butyl acetate = 1)
Explosion limits in air : 2,5 - 14,3 vol.%
Vapour pressure (20°C) : 24 kPa
Vapour pressure (50°C) : 80 kPa
Relative vapour density (air=1) : 2,0
Relative density of saturated vapour/air mixture (air=1) : 1,2
Relative density (water=1) : 0,8
Solubility in water : Complete solubility .
Soluble in : Alcohol , Chloroform , Ether , Most oils , ...
Log P Octanol/Water (20°C) : -0,24
Auto-ignition temperature : 465 °C
Minimum ignition energy : 1,15 mJ
Decomposition temperature : Not applicable.
Viscosity (20°C) : 0,32 mPa.s
Explosive properties : No chemical groups associated with explosive properties .
Oxidizing properties : No chemical groups associated with oxidizing properties .

9.2. Other information

- Surface tension (20°C) : 23,7 mN/m
Specific leading : 4,9*10E5 pS/m
% Volatiles (by weight) : > 99

SECTION 10. Stability and reactivity**10.1. Reactivity**

- Reactivity : Reacts violently with oxidizing agents.

10.2. Chemical stability

- Stability : Stable at normal circumstances .

10.3. Possibility of hazardous reactions

- Hazardous reactions : Possible formation of peroxides.

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SECTION 10. Stability and reactivity (continued)

10.4. Conditions to avoid

* Conditions to avoid : High temperatures , Light .

10.5. Incompatible materials

Materials to avoid : Oxidizing agents , Bases , Amines , Rubber , Synthetic material .

10.6. Hazardous decomposition products

Hazardous Decomposition Products : Carbon oxides .

SECTION 11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity

- * - Inhalation : High concentrations may produce central nervous system depression and loss of consciousness (slightly narcotical effect).
Symptoms include: Sore throat , Cough , Dizziness , Drowsiness , Unconsciousness .
• Acetone : LC50 (Rat, inhalation, 4 h) : 76 mg/l (Air)
- Skin contact : Symptoms include: Redness , Pain .
• Acetone : LD50 (Rabbit, dermal) : > 15800 mg/kg
- Ingestion : Symptoms include: Burning feeling , Stomach complaints , Nausea , Vomiting .
• Acetone : LD50 (Rat, oral) : 5800 mg/kg (OECD Guideline 401)
- Skin corrosion/irritation : Repeated or prolonged skin contact may cause dermatitis and defatting.
- Serious eye damage/irritation : Causes serious eye irritation.
- * Aspiration hazard : Not considered hazardous.
- Respiratory or skin sensitisation : Not sensitive .
- Carcinogenicity : Not listed as carcinogenic .
- Mutagenicity : Not listed as mutagenic .
- Reproductive toxicity : Not listed for reproductive toxicity .
- Specific target organ toxicity - single exposure : To human : May cause drowsiness or dizziness.
- Specific target organ toxicity - repeated exposure : To human : Listed not for organ toxicity
For animals : No effects known.

SECTION 12. Ecological information

12.1. Toxicity

- * Ecotoxicity : • Acetone : LC50 (Fish, 96 h) : 5540 mg/l (Oncorhynchus mykiss)
• Acetone : EC50 (Daphnia pulex, 48 h) : 8800 mg/l
• Acetone : NOEC (Algae, 8 d) : 530 mg/l (Microcystis aeruginosa)

12.2. Persistence and degradability

Persistence and degradability : • Acetone : Persistence and degradability : Easily biologically degradable.

12.3. Bioaccumulative potential

Bioaccumulation : • Acetone : Bioaccumulation : Bioaccumulation not expected .

12.4. Mobility in soil

- * Mobility : • Acetone : Mobility : Very high potential for mobility in soil.

12.5. Results of PBT and vPvB assessment

Evaluation : • Acetone : PBT/vPvB : No

ACETONE**Code : 10099****SECTION 12. Ecological information (continued)****12.6. Other adverse effects**

Photochemical ozone creation potential : No data available.
Ozone depletion potential : No data available.
Endocrine disrupting potential : No data available.
Global warming potential : No data available.

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

Waste from residues/Unused products : The product has to be destroyed according to national or local legislation, by a company specialised in handling hazardous waste products.

European list of waste products : XXXXXX - European waste product code. This code is assigned on the basis of the most current applications and can not be representative for pollutions which are arisen at the effective use of the product. The producer of the waste has to evaluate its process himself and has to grant the appropriate waste coding. See Decision 2001/118/EC.

Removal contaminated packaging : Packing is to be used exclusively for the packing of this product. After use, empty and close the packing very carefully. In case of returned packing, the empty packing can be offered back to the supplier.

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

UN Number : 1090

14.2. UN proper shipping name

ADR/RID Name : UN 1090 Acetone, 3, II, (D/E)
ADN Name : UN 1090 Acetone , 3, II
IMDG Name : UN 1090 Acetone , 3, II, (-17°C)
IATA Name : UN 1090 Acetone , 3, II

14.3. Transport hazard classe(s)

Class : 3

14.4. Packing group

Packaging Group : II

14.5. Environmental hazards

Environmentally hazard : No
Marine pollutant : No

14.6. Special precautions for user

Danger number : 33
Hazard Label(s) : 3
EmS-N° : F-E S-D

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

Type ship : Not applicable.
Pollution category : Z

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SECTION 15. Regulatory information
15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Inventories : Australian inventory (AICS): Listed in inventory.
 Canadian inventory (DSL): Listed in inventory.
 Chinese inventory (IECS): Listed in inventory.
 European inventory (EINECS): Listed in inventory.
 Japanese inventory (ENCS): Listed in inventory.
 Korean inventory (KECI): Listed in inventory.
 Philippine inventory (PICCS): Listed in inventory.
 Inventory of the United States (TSCA): Listed in inventory.
- NFPA n° : 1-3-0
- Relevant EU Rule(s) : Directive 96/82/EC of the Council of 9 December 1996 on the control of major-accident hazards involving dangerous substances
 Directive 98/24/EC of the Council of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work
 Directive 1999/13/EC of the Council of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations
 Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC
 Decision 2001/118/EC of the Commission of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes
 Regulation (EC) No 273/2004 of the European Parliament and of the Council of 11 February 2004 on drug precursors
 Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
 Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (Reach)
- * The restrictions in Annex XVII to Regulation (EC) No 1907/2006 must be observed.
- National regulations
- Germany : WGK : 1
- * - Netherlands : Water damaging : 9
 Decontamination exertion : B

15.2. Chemical Safety Assessment

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

SECTION 16. Other information

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

* Has changed compared to previous revision.

- Changes : Section 1 , Section 2 , Section 7 , Section 8 , Section 9 , Section 10 , Section 11 , Section 12 , Section 15 , Section 16 .
- * Sources of used key data : The information contained herein is based on the present state of our knowledge (Producer(s) , Chemical cards , ...)
 See also on the webaddress:
<http://apps.echa.europa.eu/registered/registered-sub.aspx#search>

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SECTION 16. Other information (continued)

- * (EU)H-statement(s) : H225 - Highly flammable liquid and vapour.
H319 - Causes serious eye irritation.
H336 - May cause drowsiness or dizziness.
EUH066 - Repeated exposure may cause skin dryness or cracking.
- * List of abbreviations and acronyms : ADN (Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation interieur) : European agreement concerning the international carriage of dangerous goods by inland waterways
ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route) : European agreement concerning the international carriage of dangerous goods by road
CO : Carbon monoxide
DNEL (Derived No Effect Level) : an estimated safe exposure level
EC50 : median Effective Concentration
EmS (Emergency Schedule) : the first code refers to the relevant fire schedule and the second code refers to the relevant spillage schedule
Eye Irrit. 2 : Eye irritation - Category 2
Flam. Liq. 2 : Flammable liquids - Category 2
IATA (International Air Transport Association) : provisions concerning the international carriage of dangerous goods by air
IMDG (International Maritime Dangerous Goods code)
LC50 : median Lethal Concentration
LD50 : median Lethal Dose
NFPA (National Fire Protection Association) or fire diamant
NOEC (No Observed Effect Concentration)
NVC1 : National Poisoning Information Center
OECD : Organisation for Economic Cooperation and Development
PBT : persistent, bioaccumulative and toxic
PNEC (Predicted No Effect Concentration) : concentration below which exposure to a substance is not expected to cause adverse effects
RCP (Reciprocal Calculation Procedure)
REACH : Registration, Evaluation, Authorisation and restriction of Chemicals
RID (Règlement concernant le transport International ferroviaire des marchandises Dangereuses) : Regulation concerning the International carriage of Dangerous goods by rail
STOT SE 3 : Specific Target Organ Toxicity - Single exposure - Category 3
STOT RE : Specific Target Organ Toxicity - Repeated exposure
TWA (Time-Weighted Average) : the average exposure over a specified period
WGK (Wassergefährdungsklasse) : a German classification of substances that indicate the environmental hazard for surface water
vPvB : very persistent and very bioaccumulative

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

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

End of document

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

Acetone

Version 2.2

Print Date 22.10.2013

Revision date / valid from 22.10.2013

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7668
2	Distribution of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7846
3	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES13324
4	Rubber production and processing	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14	6d	NA	ES7680
5	Polymer production	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7682
6	Polymer production	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7741
7	Polymer processing	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7684
8	Polymer processing	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7743
9	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 19	4	NA	ES7672
10	Uses in coatings	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 15, 19	8a, 8c, 8d, 8f	NA	ES7737
11	Uses in coatings	21	NA	1, 4, 9a, 9b, 9c, 15, 24, 31	NA	8a, 8c, 8d, 8f	NA	ES8830
12	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 19	4	NA	ES7686
13	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11,	8a, 8d	NA	ES7745

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					13, 19			
14	Use in Cleaning Agents	21	NA	3, 4, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES8831
15	Use as binders and release agents	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13	5	NA	ES7678
16	Use as binders and release agents	22	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 11	8a, 8b, 8c, 8d, 8e, 8f	NA	ES7739
17	Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13, 19	8a, 8d	NA	ES7749
18	Use in laboratories	3	NA	NA	10, 15, 19	4	NA	ES7670
19	Use in laboratories	22	NA	NA	10, 15, 19	8a	NA	ES7735
20	Use as blowing agents	3	NA	NA	1, 2, 3, 8b, 9, 12	4, 10a	NA	ES7690
21	Use in de-icing and anti-icing applications	22	NA	NA	1, 2, 8b, 11, 19	8d	NA	ES7751
22	Use in de-icing and anti-icing applications	21	NA	4	NA	8d	NA	ES8832
23	Use in Oil and Gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 8a, 8b	4	NA	ES7688
24	Use in Oil and Gas field drilling and production operations	22	NA	NA	1, 2, 3, 4, 8a, 8b	8d	NA	ES7747
25	Explosives manufacture & use	22	NA	NA	1, 3, 5, 8a, 8b	8d	NA	ES7753
26	Use as processing aid	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7845

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

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>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: Calendring 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 tableting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent</p>
Environmental Release Categories	<p>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)</p>

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	Contain and dispose of waste in accordance with environmental legislation and	

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to external treatment of waste for disposal	according to local regulations.
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.

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

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	---	Inhalation	250ppm	0,50

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PROC5, PROC8a	---	Dermal	13,71mg/kg/day	0,07
PROC6, PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC14, PROC15	---	Dermal	0,34mg/kg/day	0,00

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 2: Distribution of substance

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>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: Calendring 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 tableting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent</p>
Environmental Release Categories	<p>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)</p>

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	Contain and dispose of waste in accordance with environmental legislation and	

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to external treatment of waste for disposal	according to local regulations.
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.

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

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	---	Inhalation	250ppm	0,50

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PROC5, PROC8a	---	Dermal	13,71mg/kg/day	0,07
PROC6, PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC14, PROC15	---	Dermal	0,34mg/kg/day	0,00

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 3: Formulation & (re)packing of substances and mixtures

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC6: Calendering operations</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC14: Production of preparations or articles by tableting, compression, extrusion, pelettisation</p> <p>PROC15: Use as laboratory reagent</p>
Environmental Release Categories	<p>ERC1: Manufacture of substances</p> <p>ERC2: Formulation of preparations</p> <p>ERC4: Industrial use of processing aids in processes and products, not becoming part of articles</p> <p>ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)</p>

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.	

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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 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,	---	Inhalation	250ppm	0,50

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PROC8a, PROC10				
PROC5, PROC8a	---	Dermal	13,71mg/kg/day	0,07
PROC6, PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC14, PROC15	---	Dermal	0,34mg/kg/day	0,00

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 4: Rubber production and processing

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure 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 tableting, compression, extrusion, pelettisation</p>
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	If recycling is not practicable, dispose of in compliance with local regulations.	

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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,	---	Inhalation	250ppm	0,50

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PROC8a, PROC10, PROC13				
PROC5, PROC8a	---	Dermal	13,71mg/kg/day	0,07
PROC6, PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7	---	Dermal	2,14mg/kg/day	0,01
PROC7	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC7	---	Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC13	---	Dermal	13,71mg/kg/day	0,074
PROC14	---	Dermal	0,34mg/kg/day	0,00

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 5: Polymer production

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>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 tableting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent</p>
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 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	If recycling is not practicable, dispose of in compliance with local regulations.	

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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15

Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
	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

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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	13,71 mg/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.

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1. Short title of Exposure Scenario 6: Polymer production

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tableting, 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).
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	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	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

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PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8b, PROC9	---	Inhalation	250ppm	0,50
PROC8b, PROC9	---	Dermal	6,86mg/kg/day	0,04
PROC14	during 1 - 4 hours	Inhalation	300ppm	0,002

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 7: Polymer processing

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>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 tableting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent</p>
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 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	If recycling is not practicable, dispose of in compliance with local regulations.	

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to external recovery of waste

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,	---	Inhalation	250ppm	0,50

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PROC8a, PROC10, PROC13				
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC13	---	Dermal	13,71 mg/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.

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1. Short title of Exposure Scenario 8: Polymer processing

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tableting, 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).
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	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the worker	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

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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.

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1. Short title of Exposure Scenario 9: Uses in coatings

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC7: Industrial spraying</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

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.	

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

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, PROC15	---	Inhalation	50ppm	0,10
PROC2	---	Dermal	1,37mg/kg/day	0,01
PROC3, PROC4	---	Inhalation	100ppm	0,20
PROC4, PROC9	---	Dermal	6,86mg/kg/day	0,04
PROC5, PROC8a,	---	Inhalation	250ppm	0,50

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PROC10, PROC13, PROC19				
PROC5, PROC8a, PROC13	---	Dermal	13,71mg/kg/day	0,07
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7	---	Dermal	2,14mg/kg/day	0,01
PROC7	Outdoor use., 30% efficiency	Inhalation	350ppm	0,70
PROC7	---	Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC15	---	Dermal	0,34mg/kg/day	0,00
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 10: Uses in coatings

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC13: Treatment of articles by dipping and pouring</p> <p>PROC15: Use as laboratory reagent</p> <p>PROC19: Hand-mixing with intimate contact and only PPE available</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p> <p>ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix</p>

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.	

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Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.
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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).
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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

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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	Dermal	64,28mg/kg/day	0,35

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	substance in product: 5% - 25%			
PROC11	---	Dermal	107,14mg/kg/day	0,58
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 11: Uses in coatings

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC1: Adhesives, sealants PC4: Anti-freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC15: Non-metal-surface treatment products PC24: Lubricants, greases, release products PC31: Polishes and wax blends
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

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

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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

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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 m ³
	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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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 cm ²
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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 cm ²
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 cm ²
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

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	use)	
	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 cm ²
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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.9 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
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	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 482,75 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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 cm ²
Other given operational conditions affecting consumers exposure	Room size	34 m ³
	Covers use in a one car garage (34 m ³) 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

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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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.14 Contributing scenario controlling consumer exposure for: PC9c: Finger paints

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
	Physical Form (at time of use)	liquid

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	Vapour pressure	240 hPa
Amount used	Amount used per event	1,35 g
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 254,4 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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

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	Frequency of use	29 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 430 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

No exposure assessment presented for human health.

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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1. Short title of Exposure Scenario 12: Use in Cleaning Agents

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>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</p>
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

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,

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PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC19

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

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA

Contributing 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,	---	Inhalation	250ppm	0,50

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PROC19				
PROC5, PROC8a	---	Dermal	13,71mg/kg/day	0,07
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7	---	Dermal	2,14mg/kg/day	0,01
PROC7	---	Inhalation	350ppm	0,70
PROC7	Outdoor use., 30% efficiency	Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC13	---	Dermal	13,71 mg/kg/day	0,074
PROC19	with gloves	Dermal	28,29mg/kg/day	0,15

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 13: Use in Cleaning Agents

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>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</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems</p>

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, PROC3, PROC4,

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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 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

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No information available.

Workers

ECETOC TRA

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

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	Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency			
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11	---	Dermal	107,14mg/kg/day	0,58
PROC11	---	Inhalation	300ppm	0,60
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 14: Use in Cleaning Agents

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC3: Air care products PC4: Anti-freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC24: Lubricants, greases, release products PC35: Washing and cleaning products (including solvent based products) PC38: Welding and soldering products (with flux coatings or flux cores), flux products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

Substance is a unique structure, Readily biodegradable.

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

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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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
		Covers use under typical household ventilation., Covers use at ambient temperatures.

2.4 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
		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 product concentrations up to 1%
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	0,5 g
Frequency and duration of use	Exposure duration	0,02 h
	Frequency of use	365 days/year
	Frequency of use	1 Times per day

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Other given operational 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 cm ²
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 cm ²
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

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	use)	
	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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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		
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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.10 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
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	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²
Other given operational conditions affecting consumers exposure	Room size	34 m ³
	Covers use in a one car garage (34 m ³) under typical ventilation.	
2.11 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
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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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.14 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.15 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

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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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	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%

2.16 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	34 m ³
	Covers use in a one car garage (34 m ³) under typical ventilation.	

2.17 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

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	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.18 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.19 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Covers use under typical household ventilation., Covers use at ambient temperatures.	
2.20 Contributing scenario controlling consumer exposure for: PC35: Cleaners, liquids (all		
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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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

2.21 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 cm ²
Other given operational conditions affecting consumers exposure	Room size	20 m ³
	Covers use under typical household ventilation., Covers use at ambient temperatures.	

3. Exposure estimation and reference to its source

Environment

No information available.

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Consumers

No exposure assessment presented for human health.

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

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

For scaling see ECT Tool:

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

Health

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

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

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

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1. Short title of Exposure Scenario 15: 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	<p>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</p>
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 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,

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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 from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.	
	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)	
	Ensure material transfers are under containment or extract ventilation. or Ensure operation is undertaken outdoors.(PROC7)	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
	If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC7)	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Inhalation	0,01ppm	0,00002
PROC1, PROC3	---	Dermal	0,34mg/kg/day	0,002
PROC2	---	Inhalation	50ppm	0,10
PROC2	---	Dermal	1,37mg/kg/day	0,01
PROC3, PROC4	---	Inhalation	100ppm	0,20
PROC4, PROC9	---	Dermal	6,86mg/kg/day	0,04
PROC5, PROC6, PROC8a	---	Inhalation	250ppm	0,50
PROC5	---	Dermal	13,71mg/kg/day	0,07

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PROC6	---	Dermal	27,43mg/kg/day	0,15
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0,05
PROC7	---	Dermal	2,14mg/kg/day	0,01
PROC7	---	Inhalation	350ppm	0,70
PROC7	---	Dermal	42,86mg/kg/day	0,23
PROC7	half mask	Inhalation	50ppm	0,10
PROC8a	---	Dermal	13,71 mg/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	13,71 mg/kg/day	0,074

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 16: Use as binders and release agents

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	<p>PROC1: Use in closed process, no likelihood of exposure</p> <p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC3: Use in closed batch process (synthesis or formulation)</p> <p>PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises</p> <p>PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)</p> <p>PROC6: Calendering operations</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8b: Wide dispersive indoor use of reactive substances in open systems</p> <p>ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p> <p>ERC8e: Wide dispersive outdoor use of reactive substances in open systems</p> <p>ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix</p>

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	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.	

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disposal

Conditions and measures related to external recovery of waste | 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

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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	Dermal	16,46mg/kg/day	0,09

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	substance in product: 5% - 25%			
PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0,40
PROC11	---	Dermal	2,14mg/kg/day	0,01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11	---	Dermal	107,14mg/kg/day	0,58
PROC5, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities 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	liquid

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	use)	
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	Vapour pressure	> 10 kPa
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Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).
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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

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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:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 18: 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	Use suitable eye protection.	

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to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

ECETOC TRA

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

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 19: Use in laboratories

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8a

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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.	

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	<p>or Limit the substance content in the mixture to 25 %.(PROC10)</p> <p>or Avoid carrying out operation for more than 4 hours.(PROC10)</p> <p>Avoid carrying out operation for more than 1 hour.(PROC19)</p>
Conditions and measures related to personal protection, hygiene and health evaluation	<p>Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.</p> <p>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)</p>

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>

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Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (<http://cefic.org/templates/shwPublications.asp?HID=750>)
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 20: Use as blowing agents

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC12: use of blowing agents in manufacture of foam
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC10a

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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

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	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the 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>

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Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (<http://cefic.org/templates/shwPublications.asp?HID=750>)
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 21: Use in de-icing and anti-icing applications

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC19: Hand-mixing with intimate contact and only PPE available
Environmental Release Categories	ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8d

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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	Locate bulk storage outdoors.	

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measures to control dispersion from source towards the worker

- Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
- Sample via a closed loop or other system to avoid exposure.
Handle substance within a closed system.(PROC1, PROC2)
- Ensure material transfers are under containment or extract ventilation.
or
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

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PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0,50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64,28mg/kg/day	0,35
PROC11	---	Dermal	107,14mg/kg/day	0,58
PROC11	half mask	Inhalation	100ppm	0,20
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0,60
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16,97mg/kg/day	0,09

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 22: Use in de-icing and anti-icing applications

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

2.1 Contributing scenario controlling environmental exposure for: ERC8d

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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 cm ²
Other given operational	Room size	34 m ³

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conditions affecting consumers exposure	Covers use in a one car garage (34 m3) under typical ventilation.
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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 cm ²
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 cm ²
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.

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Consumers

No exposure assessment presented for human health.

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

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

For scaling see ECT Tool:

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

Health

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

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

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

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1. Short title of Exposure Scenario 23: Use in Oil and Gas field drilling and production operations

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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

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	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the 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

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be necessary to define appropriate site-specific risk management measures.
For scaling see: GES Worker Chemical Safety Assessment (CSA) Template
(<http://cefic.org/templates/shwPublications.asp?HID=750>)
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 24: Use in Oil and Gas field drilling and production operations

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Environmental Release Categories	ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8d

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site	
Frequency and duration of use	Continuous exposure	360 days/year
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.	
Technical conditions and measures at process level (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

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	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
Technical conditions and measures to control dispersion from source towards the 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	13,71 mg/kg/day	0,07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0,60
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0,20

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

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

For scaling see ECT Tool:

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

Health

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

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 25: Explosives manufacture & use

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Environmental Release Categories	ERC8d: Wide dispersive outdoor use of processing aids in open systems

2.1 Contributing scenario controlling environmental exposure for: ERC8d

Substance is a unique structure, Readily biodegradable.

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

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Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	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

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Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 26: Use as processing aid

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Process categories	<p>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 tableting, compression, extrusion, pelettisation PROC15: Use as laboratory reagent</p>
Environmental Release Categories	<p>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)</p>

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	Contain and dispose of waste in accordance with environmental legislation and	

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to external treatment of waste for disposal	according to local regulations.
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.

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

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	---	Inhalation	250ppm	0,50

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PROC5, PROC8a	---	Dermal	13,71mg/kg/day	0,07
PROC6, PROC10	---	Dermal	27,43mg/kg/day	0,15
PROC8b	---	Inhalation	150ppm	0,30
PROC8b	---	Dermal	6,86mg/kg/day	0,037
PROC9	---	Inhalation	200ppm	0,40
PROC14, PROC15	---	Dermal	0,34mg/kg/day	0,00

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

Environment

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

For scaling see ECT Tool:

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

Health

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

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

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recall procedure available	Yes	
emergency number (24/365)	+32 (0)56 77 69 44	+31 (0)78 6544 944
QUALITY SYSTEMS		
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ISO 14001	Yes	Yes
ISO 22000	Yes	Yes
FSSC 22000	Yes	Yes
GMP+ -feed	Yes	Yes
OHSAS18001	-	Yes
ESAD	Yes	Yes
other	-	AEO