

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

ACETONE

Version 7.0 Print Date 2016/11/10

Revision date / valid from 2016/11/10 MSDS code: MACE001

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

1.1. Product identifier

 Trade name
 : ACETONE

 Substance name
 : acetone

 Index-No.
 : 606-001-00-8

 CAS-No.
 : 67-64-1

 EC-No.
 : 200-662-2

EU REACH-Reg. No. : 01-2119471330-49-xxxx

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

Use of the : Identified use: See table in front of appendix for a complete

Substance/Mixture overview of identified uses.

Uses advised against : At this moment we have not identified any uses advised

against

1.3. Details of the supplier of the safety data sheet

Company : Jem Products

Unit 20 Sycamore Trading Estate

Squires Gate Lane

Blackpool FY4 3RL

1.4. Emergency telephone number

Emergency telephone

number

NHS 111 or 999

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

	REGULATION (EC) No 1272/2008					
Hazard class	Hazard category	Target Organs	Hazard statements			
Flammable liquids	Category 2		H225			

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

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

Most important adverse effects

Human Health See section 11 for toxicological information.

Physical and chemical

Potential environmental

hazards

See section 9 for physicochemical information.

See section 12 for environmental information.

effects

Label elements 2.2.

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols





Signal word Danger

Hazard statements H225 Highly flammable liquid and vapour.

Causes serious eye irritation. H319

H336 May cause drowsiness or dizziness.

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.

P303 + P361 + P353 IF ON SKIN (or hair): Take off Response

immediately all contaminated clothing.

Rinse skin with water/shower.

P304 + P340 IF INHALED: Remove person to fresh air

and keep comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with

> water for several minutes. Remove contact lenses, if present and easy to do. Continue

rinsing.

Storage : P403 + P233 Store in a well-ventilated place. Keep

container tightly closed.

Additional Labelling:

EUH066 Repeated exposure may cause skin dryness or cracking.

Hazardous components which must be listed on the label:

acetone

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.1. Substances

			Classification (REGULATION (EC) No 1272/2008)		
Haza	rdous components	Amount [%]	Hazard class / Haz category	ard Hazard statements	
acetone					
Index-No. CAS-No. EC-No.	: 606-001-00-8 : 67-64-1 : 200-662-2	<= 100	Flam. Liq.2 Eye Irrit.2 STOT SE3	H225 H319 H336	
EU REACH- Reg. No.	: 01-2119471330-49-xxxx				

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Remove from exposure, lie down. Take off all contaminated

clothing immediately. Wash contaminated clothing before re-

use.

If inhaled : Move to fresh air. If breathing is irregular or stopped,

administer artificial respiration. If unconscious place in recovery position. Consult a physician after significant

exposure.

In case of skin contact : Wash off immediately with plenty of water. Call a physician if

irritation persists.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,

for at least 15 minutes. Consult an eye specialist immediately.

Go to an ophthalmic hospital if possible.

If swallowed : Rinse mouth with water. Immediately give plenty of water (if

possible charcoal slurry). Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting - seek medical advice. If a person vomits when lying on his back, place him in the recovery position. Call a physician or

poison control centre immediately.

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

Symptoms : acidosis, Controle the alkaline reserve, Shortness of breath,

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. See Section 11 for more detailed information on health effects and symptoms.

Effects : Aspiration hazard if swallowed - can enter lungs and cause

damage. Aspiration may cause pulmonary oedema and

pneumonitis.

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

Treat symptomatically.Later control for pneumonia and lung

oedema. In case of shortness of breath, give oxygen. Artificial

respiration and/or oxygen may be necessary.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing

media

Unsuitable extinguishing

media

Use water spray, alcohol-resistant foam, dry chemical or

carbon dioxide.

High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during

firefighting

Highly flammable, Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Flash back possible over considerable distance.

Hazardous combustion

products

Carbon monoxide, Carbon dioxide (CO2)

5.3. Advice for firefighters

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing

apparatus. Wear appropriate body protection (full protective

suit)

Further advice : Cool closed containers exposed to fire with water

spray. Heating will cause a pressure rise - with risk of bursting. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

: Use personal protective equipment. Keep away unprotected Personal precautions

> persons. Provide adequate ventilation. Keep away from heat and sources of ignition. Avoid contact with skin, eyes and

clothing. Do not breathe vapours or spray mist.

Environmental precautions

Environmental precautions

: Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers

and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

containment and cleaning

Methods and materials for : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to

local / national regulations (see section 13).

Further information : Treat recovered material as described in the section "Disposal

considerations".

Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on personal protective equipment.

See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling : Keep container tightly closed. Ensure adequate ventilation. Use

> personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Emergency

eye wash fountains and emergency showers should be

available in the immediate vicinity.

: Keep away from food, drink and animal feedingstuffs. Smoking, Hygiene measures

eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Remove

and wash contaminated clothing before re-use.

Conditions for safe storage, including any incompatibilities

areas and containers

Requirements for storage : Keep container tightly closed. Keep in an area equipped with

solvent resistant flooring.

Advice on protection against fire and explosion

: Combustible liquid. Keep away from sources of ignition - No smoking. Use only explosion-proof equipment. Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Take measures to prevent the build up of electrostatic charge. Ensure all equipment is electrically grounded before beginning transfer operations.

Further information on storage conditions

: Keep tightly closed in a dry and cool place. Keep away from $\,$

direct sunlight. Keep in a well-ventilated place.

Advice on common

storage

: Keep away from food, drink and animal feedingstuffs. Incompatible with oxidizing agents. See section 10.5 -

Incompatable materials.

Suitable packaging

materials

: Steel, Stainless steel

Unsuitable packaging

materials

: , Plastic, copper

7.3. Specific end use(s)

Specific use(s) : Identified use

: Identified use: See table in front of appendix for a complete

overview of identified uses.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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

Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL

Workers, Long-term - systemic effects, Skin contact : 186 mg/kg bw/day

DNEL

Workers, Long-term - systemic effects, Inhalation : 1210 mg/m3

DNEL

Workers, Acute - local effects, Inhalation : 2420 mg/m3

DNEL

Consumers, Long-term - systemic effects, Skin contact : 62 mg/kg bw/day

DNEL

Consumers, Long-term - systemic effects, Inhalation : 200 mg/m3

DNEL

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

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Predicted No Effect Concentration (PNEC)

Fresh water : 10.6 mg/l

Marine water : 1.06 mg/l

Intermittent releases : 21 mg/l

Sewage treatment plant (STP) : 100 mg/l

Fresh water sediment : 30.4 mg/kg, 30.4 mg/kg d.w.

Marine sediment : 3.04 mg/kg, 3.04 mg/kg d.w.

Soil : 29.5 mg/kg

Other Occupational Exposure Limit Values

UK. EH40 Workplace Exposure Limits (WELs), Short Term Exposure Limit (STEL): 1,500 ppm, 3,620 mg/m3

UK. EH40 Workplace Exposure Limits (WELs), Time Weighted Average (TWA): 500 ppm, 1,210 mg/m3

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, Time Weighted Average (TWA):

500 ppm, 1,210 mg/m3 Indicative

ELV (IE), Time Weighted Average (TWA):

500 ppm, 1,210 mg/m3

Indicative OELV

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Provide sufficient air exchange and/or exhaust in work rooms. Take measures to prevent the build up of electrostatic charge.

Personal protective equipment

Respiratory protection

Advice : Required, if exposure limit is exceeded (e.g. OEL).

In case of insufficient ventilation, wear suitable respiratory

equipment.

Respiratory protection complying with EN 141.

Recommended Filter type:AX

In case of intensive or longer exposure use self-contained

breathing apparatus.

Hand protection

Advice : Protective gloves complying with EN 374.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion,

and the contact time.

Protective gloves should be replaced at first signs of wear.

Material : butyl-rubber Break through time : >= 4 h Glove thickness : 0.5 mm

Eye protection

Advice : Safety goggles

Ensure that eyewash stations and safety showers are close to the

workstation location.

Skin and body protection

Advice : Solvent resistant protective clothing

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.

Avoid subsoil penetration.

If the product contaminates rivers and lakes or drains inform

respective authorities.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form : liquid

Colour : colourless

Odour : aromatic

Odour Threshold : ca. 13 ppm

pH : 5 - 6 (10 g/l; 20 °C)

Melting point/range : -94.7 °C

Boiling point/boiling range : 55.8 - 56.6 °C

Flash point : -18 °C (closed cup

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Evaporation rate : not determined

Flammability (solid, gas) : Highly flammable.

Upper explosion limit : 13.0 %(V)

Lower explosion limit : 2.1 %(V)

Vapour pressure : 240 hPa (20 °C)

800 hPa (50 °C)

Relative vapour density : 2.0

Density : 0.791 g/cm3 (20 °C)

Water solubility : completely miscible

Partition coefficient: n-octanol/water : log Kow -0.24 (20 °C)

(measured)

Auto-ignition temperature : 465 °C

Thermal decomposition : no data available

Viscosity, dynamic : 0.33 mPa.s (20 °C)

Explosivity : Formation of explosive air/vapour mixtures is

possible.

Oxidizing properties : not oxidising

9.2. Other information

Molecular weight : 58.09 g/mol

Refractive index : 1.358 - 1.359

SECTION 10: Stability and reactivity

10.1. Reactivity

Advice : Combustibles vapours may form with air. Take measures to

prevent the build up of electrostatic charge.

Vapours are heavier than air and may spread along floors.

10.2. Chemical stability

Advice : Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : No information available.

10.4. Conditions to avoid

Conditions to avoid : Keep away from heat and sources of ignition. Keep away from

direct sunlight.

Thermal decomposition : no data available

10.5. Incompatible materials

Materials to avoid : strong reducing agents, Oxidizing agents, Halogenated

compounds, Alkali metals, Ethanolamine, Hydrogen peroxide,

Attacks certain plastics and rubbers.

10.6. Hazardous decomposition products

Hazardous decomposition : Carbon monoxide, Carbon dioxide (CO2)

products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Data for the produc	ot ,	
	Irritation	
	Eyes	
Result	: Causes serious eye irritation.	
	Specific Target Organ Toxicity	
	Single exposure	
Remark	: May cause drowsiness or dizziness.	
Component:	acetone	CAS-No. 67-64-1
	Acute toxicity	
	Oral	
LD50	: 5800 mg/kg (Rat) (OECD Test Guidelin Cause pain in mouth and throat, nause headache and risk of unconsciousness	ea, vomiting, dizziness,
	Inhalation	
LC50	: ca. 76 mg/l (Rat; 4 h) May cause pain in nose and throat, na deteriorate reactivity and at high conce	
	Dermal	
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LD50 : > 15800 mg/kg (Rat)

Irritation

Skin

Result : No skin irritation (Guinea pig)

Repeated exposure may cause skin dryness or cracking.

Eyes

Result : Irritating to eyes. (Rabbit) (OECD Test Guideline 405)

May cause corneal damage.

Sensitisation

Result : not sensitizing (Guinea pig) (OECD Test Guideline 406)

CMR effects

CMR Properties

Carcinogenicity : Animal testing did not show any carcinogenic effects.

Mutagenicity : Tests on bacterial or mammalian cell cultures did not show

mutagenic effects.

In vivo tests did not show mutagenic effects

Teratogenicity : Causes developmental effects in animals at high doses.

Reproductive toxicity : Animal testing did not show any effects on fertility.

Carcinogenicity

(negative, Mouse, female)

(Dermal)

(No guideline followed)

Genotoxicity in vitro

Result : negative (Chromosome aberration test in vitro; CHO (Chinese

Hamster Ovary) cells; with and without metabolic activation)

(OECD Test Guideline 473)

negative (In vitro gene mutation study in mammalian cells; Mouse

Lymphoma Cells; no) (OECD Test Guideline 476)

negative (Bacterial Reverse Mutation Test; Salmonella

typhimurium; with and without metabolic activation) (OECD Test

Guideline 471)

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Genotoxicity in vivo

Result : negative (In vivo micronucleus test; Mouse, male and female)

Teratogenicity

(Prenatal Developmental Toxicity Study; Rat)

(Inhalation)

(OECD Test Guideline 414)

negative

Specific Target Organ Toxicity

Repeated exposure

Remark : Based on available data, the classification criteria are not met.

Other toxic properties

Repeated dose toxicity

NOAEL : 900 mg/kg bw/day

(Rat)

(Oral; 90-day)

NOAEC : 22500 mg/m³

(Rat)

(Inhalation; 8 Weeks)

Aspiration hazard

Based on available data, the classification criteria are not met.,

Further information

Experience with human exposure

: Symptoms of overexposure may be headache, dizziness,

tiredness, nausea and vomiting.

Chronic exposure may cause dermatitis.

Chronic inhalation causes tiredness, headache and rhinitis.,

SECTION 12: Ecological information

12.1. Toxicity

Data for the product

Acute toxicity

Acute aquatic toxicity

Result : The product is not classified as dangerous for the environment.

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

Acute toxicity

Fish

LC50 : 5540 mg/l (Oncorhynchus mykiss; 96 h)

LC50 : 11000 mg/l (Alburnus alburnus; 96 h)

Toxicity to daphnia and other aquatic invertebrates

LC50 : 8800 mg/l (Daphnia pulex (Water flea); 48 h)

algae

NOEC : 430 mg/l (Prorocentrum minimum; 96 h)

Bacteria

EC12 : 1000 mg/l (activated sludge; 0.5 h) (static test; End point:

Respiration inhibition; OECD Test Guideline 209)

Chronic toxicity

Aquatic invertebrates

NOEC : 2212 mg/l (Daphnia pulex (Water flea); 28 d) (End point:

Reproduction)

12.2. Persistence and degradability

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Component:	acetone	CAS-No. 67-64-1
	Persistence and degradability	
	Persistence	
Result	: decomposition by hydrolysis.	
	Biodegradability	
Result	: 91 % (Exposure Time: 28 d)(OECD Te Readily biodegradable	st Guideline 301B)

13/102

ΕN

12.3. Bioaccumulative potential

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

Result : log Kow -0.24

BCF: 3 (BCFWIN-software) Bioaccumulation is not expected.

12.4. Mobility in soil

Component:	CAS-No. 67-64-1	
	Mobility	
Air	: The product evaporates readily.	

Water : The product is water soluble.

Soil : Mobile in soils

12.5. Results of PBT and vPvB assessment

Component:	acetone	CAS-No. 67-64-1
	Results of PBT and vPvB assessmen	nt
Result	: This substance is not considered to b nor toxic (PBT)., This substance is no persistent and very bioaccumulating	ot considered to be very

12.6. Other adverse effects

Component:	acetone CAS-No. 67	'-64-1
	Biochemical Oxygen Demand (BOD)	
Result	: 1760 mg/g (Incubation time: 5 d)	
	Chemical Oxygen Demand (COD)	
Result	: 2100 mg/g	
	Additional ecological information	
Result	: Do not flush into surface water or sanitary sewer system.	
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Avoid subsoil penetration.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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

disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.

Contaminated packaging : Dispose of contaminated packaging in the same way as the

product. In accordance with local and national regulations. Do not burn, or use a cutting torch on, the empty drum. Risk of

explosion.

European Waste Catalogue Number No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation

with the regional waste disposer.

SECTION 14: Transport information

14.1. UN number

1090

14.2. UN proper shipping name

ADR : ACETONE RID : ACETONE IMDG : ACETONE

14.3. Transport hazard class(es)

ADR-Class : 3

(Labels; Classification Code; Hazard 3; F1; 33; (D/E)

identification No; Tunnel restriction code)

RID-Class : 3

(Labels; Classification Code; Hazard 3; F1; 33

identification No)

IMDG-Class : 3

(Labels; EmS) 3; F-E, S-D

14.4. Packaging group

ADR : II RID : II IMDG : II

14.5. Environmental hazards

Environmentally hazardous according to ADR : no

Environmentally hazardous according to RID : no Marine Pollutant according to IMDG-Code : no

14.6. Special precautions for user

Note : Not applicable

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

IMDG : Not applicable.

SECTION 15: Regulatory information

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

Data for the product

EU. REACH Candidate List of Substances of Very High Concern for

: : Not listed

EU. REACH Annex XIV, : ; Not listed

Authorization (SVHC)

Substances Subject to

Authorization

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

EU. Regulation 273/2004, Drug

Precursors, Category 3

Scheduled substance Combined Nomenclature (CN) code:,

2914 11 00

EU. REACH, Annex XVII, : Marketing and Use Restrictions (Regulation

1907/2006/EC)

Point Nos.:, 40; Listed

EU. Directive

2012/18/EU (SEVESO

III) Annex I

Lower-tier requirements: 5,000 tonnes; Part 1: Categories of dangerous substances; P5c: Flammable liquids, Categories 2 or 3 not covered by P5a and P5b, The information given is valid if the product is stored below the boiling point and at a

pressure of 1013 hPa.

Upper-tier requirements: 50,000 tonnes; Part 1: Categories of dangerous substances; P5c: Flammable liquids, Categories 2 or 3 not covered by P5a and P5b, The information given is valid if the product is stored below the boiling point and at a

pressure of 1013 hPa.

WGK (DE) WGK 1: slightly water endangering: 6; Classification source is

Annex 2.

Notification status

R51389 / Version 7.0 16/102 ΕN

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Regulatory List Notification
AICS YES
DSL YES
EINECS YES
ENCS (JP) YES
IECSC YES
ISHL (JP) YES

Notification number

200-662-2 (2)-542

IECSC YES

ISHL (JP) YES (2)-542

JEX (JP) YES (2)-542

KECI (KR) YES KE-29367

NZIOC YES HSR001070

PICCS (PH) YES TSCA YES

15.2. Chemical safety assessment

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

SECTION 16: Other information

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

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

Abbreviations and Acronyms

BCF bioconcentration factor

BOD biochemical oxygen demand
CAS Chemical Abstracts Service

CLP Classification, Labelling and Packaging

CMR carcinogenic, mutagenic or toxic to reproduction

COD chemical oxygen demand

DNEL derived no-effect level

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

Globally Harmonized System of Classification and Labelling of

Chemicals

LC50 median lethal concentration

LOAEC lowest observed adverse effect concentration

LOAEL lowest observed adverse effect level

LOEL lowest observed effect level

NLP no-longer polymer

NOAEC no observed adverse effect concentration

NOAEL no observed adverse effect level

NOEC no observed effect concentration

NOEL no observed effect level

OECD Organisation for Economic Cooperation and Development

OEL occupational exposure limit

PBT persistent, bioaccumulative and toxic
PNEC predicted no-effect concentration
STOT specific target organ toxicity
SVHC substance of very high concern

UVCB substance of unknown or variable composition, complex reaction

products or biological materials

vPvB very persistent and very bioaccumulative

Further information

Key literature references : and sources for data

Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were

used to create this safety data sheet.

Methods used for product classification

The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.

Hints for trainings

The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of

hazardous materials must be adhered to.

Other information

The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements

and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material

or in any process, unless specified in the text.

| Indicates updated section.

No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environm ental Release Category (ERC)	Article Category (AC)	Specified
1	Manufacture of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7668
2	Distribution of substance	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES7846
3	Formulation & (re)packing of substances and mixtures	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 14, 15	1, 2, 4, 6a	NA	ES13324
4	Polymer processing	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7684
5	Polymer processing	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7743
6	Use in Cleaning Agents	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 19	4	NA	ES7686
7	Use in Cleaning Agents	21	NA	3, 4, 9a, 9b, 9c, 24, 35, 38	NA	8a, 8d	NA	ES8831
8	Use in Cleaning Agents	22	NA	NA	1, 2, 3, 4, 5, 8a, 8b, 9, 10, 11, 13, 19	8a, 8d	NA	ES7745
9	Use in laboratories	3	NA	NA	10, 15, 19	4	NA	ES7670
10	Use in laboratories	22	NA	NA	10, 15, 19	8a	NA	ES7735
11	Use in de-icing and anti-icing applications	21	NA	4	NA	8d	NA	ES8832
12	Use in de-icing and anti-icing applications	22	NA	NA	1, 2, 8b, 11, 19	8d	NA	ES7751
13	Use in oil and gas field drilling and production operations	3	NA	NA	1, 2, 3, 4, 8a, 8b	4	NA	ES7688
14	Use in oil and gas field drilling and production operations	22	NA	NA	1, 2, 3, 4, 8a, 8b	8d	NA	ES7747
15	Explosives manufacture & use	22	NA	NA	1, 3, 5, 8a, 8b	8d	NA	ES7753
16	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
17	Uses in coatings	3	NA	NA	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 19	4	NA	ES7672
18	Uses in coatings	21	NA	1, 4, 9a, 9b, 9c, 15, 24, 31	NA	8a, 8c, 8d, 8f	NA	ES8830

19	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
20	Use as binders and release agents	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13	5	NA	ES7678
21	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
22	Use in agrochemicals	22	NA	NA	1, 2, 4, 8a, 8b, 11, 13, 19	8a, 8d	NA	ES7749
23	Rubber production and processing	3	NA	NA	1, 2, 3, 4, 5, 6, 7, 8a, 8b, 9, 10, 13, 14	6d	NA	ES7680
24	Polymer production	3	NA	NA	1, 2, 3, 4, 5, 6, 8a, 8b, 9, 10, 13, 14, 15	6d	NA	ES7682
25	Polymer production	22	NA	NA	1, 2, 8a, 8b, 9, 14	8a, 8c, 8d, 8f	NA	ES7741
26	Use as blowing agents	3	NA	NA	1, 2, 3, 8b, 9, 12	4, 10a	NA	ES7690

1. Short title of Exposure Scenario 1: Manufacture of substance				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent			
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)			

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

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure	360 days/year		
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers		
measures to reduce or limit	Air	or, Charcoal adsorbers		
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.			
Organizational measures to prevent/limit release from the site				
Conditions and measures related to external treatment of waste for	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.			
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 co	ntrolling worker expos	ure for: PROC1 PROC2 PROC3 PROC4		

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
R51389 / Version 7.0	21/102	EN

	.,	10.15	
	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.		
nom source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

3. Exposure estimation and reference to its source

Environment

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC14, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0.50
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC14, PROC15		Dermal	0.34mg/kg/day	0.00

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

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

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

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

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

1. Short title of Exposure Scenario 2: Distribution of substance					
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites				
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent				
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)				

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

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure	360 days/year		
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers		
measures to reduce or limit	Air	or, Charcoal adsorbers		
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.			
Organizational measures to prevent/limit release from the site				
Conditions and measures related to external treatment of waste for	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.			
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 co	ntrolling worker expos	sure for: PROC1 PROC2 PROC3 PROC4		

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

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Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
R51389 / Version 7.0	24/102	EN

	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.		
nom source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

3. Exposure estimation and reference to its source

Environment

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC14, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0.50
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC14, PROC15		Dermal	0.34mg/kg/day	0.00

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

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

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

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

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

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

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

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure 360 days/year			
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers		
measures to reduce or limit discharges, air emissions and releases to soil	Air	or, Charcoal adsorbers		
	Common practices vary across sites thus conservative process release estimates used.			
Organizational measures to prevent/limit release from the site				
Conditions and measures related to external treatment of waste for	Total and diopose of master in accordance man circumstante in an accordance			
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				

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

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Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
R51389 / Version 7.0	27/102	EN

	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.		
nom source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant of employee training.	ploves (tested to EN374) in combination with 'basic'	

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC14, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0.50
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC14, PROC15		Dermal	0.34mg/kg/day	0.00

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

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

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

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

Environment

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

1. Short title of Exposure Scenario 4: Polymer processing			
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent		
Environmental Release Categories	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers		

2.1 Contributing scenario controlling environmental exposure for: ERC6d

Substance is a unique structure, Readily biodegradable.

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

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

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
R51389 / Version 7.0	30/102 EN		

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

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC14, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0.50
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC13		Dermal	13.71mg/kg/day	0.074
PROC14, PROC15		Dermal	0.34mg/kg/day	0.00

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

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

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

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

Environment

For scaling see ECT Tool:

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

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1. Short title of Exposure Scenario 5: 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 expose PROC8a: Transfer of substance or preparation (charging/ discharging) from/vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicate filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		

2.1 Contributing scenario controlling environmental exposure for: ERC8a

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit discharges, air emissions and releases to soil	Air	or, Charcoal adsorbers	
	Common practices vary ac estimates used.	cross sites thus conservative process release	
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Outland and dispose of waste in accordance with chimicital registation and		
Conditions and measures related			
to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
,	(11'	(BBOO4 BBOO6 BBOO6- BBOO6	

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC14

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

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC14		Dermal	0.34mg/kg/day	0.002
PROC2		Inhalation	20ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC8a, PROC14	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20
PROC8a		Dermal	0.14mg/kg/day	0.001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70
PROC8a		Dermal	13.71mg/kg/day	0.07
PROC8a, PROC14	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC8b, PROC9		Inhalation	250ppm	0.50
PROC8b, PROC9		Dermal	6.86mg/kg/day	0.04
PROC14		Dermal	3.43mg/kg/day	0.02

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

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

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

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

Environment

For scaling see ECT Tool:

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

ACETONE
For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750)
Additional good practice advice beyond the REACH Chemical Safety Assessment
Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 6: Use in Cleaning Agents			
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles		

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
	Air	Closed system, or, Treated by scrubbers	
	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	ross sites thus conservative process release	
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Toolitain and dispose of waste in accordance with crivilorintental registation and		
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, PROC19

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

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

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC8a, PROC10, PROC13, PROC19		Inhalation	250ppm	0.50
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0.05
PROC7		Dermal	2.14mg/kg/day	0.01
PROC7		Inhalation	350ppm	0.70
PROC7	Outdoor use., 30% efficiency	Dermal	42.86mg/kg/day	0.23
PROC7	half mask	Inhalation	50ppm	0.10
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC10		Dermal	27.43mg/kg/day	0.15
PROC13		Dermal	13.71mg/kg/day	0.074
PROC19	with gloves	Dermal	28.29mg/kg/day	0.15

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

Exposure Scenario

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

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that

risks are managed to at least equivalent levels. Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES Environment For scaling see ECT Tool: ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivativesreachconsortium/phenol-derivatives-dossiers.aspx For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750) Additional good practice advice beyond the REACH Chemical Safety Assessment Assumes a good basic standard of occupational hygiene is implemented.

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1. Short title of Exposure Scenario 7: Use in Cleaning Agents			
Main User Groups	SU 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	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	ross sites thus conservative process release	
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for	Contain and dispesse of waste in accordance with chimerina regionalien at		
disposal			
Conditions and measures related	If recycling is not practicable, dispose of in compliance with local regulations.		
to external recovery of waste			

2.2 Contributing scenario controlling 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	
Ama ayyat yana d	Amount wood nor ovent	0.1 ~	
Amount used	Amount used per event	0.1 g	
	Exposure duration	0.25 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	4 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
risk management			
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
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2.3 Contributing scenario controlling consumer exposure for: PC3: Aircare, continuous action

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(solid & liquid)		
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
	Physical Form (at time of use)	solid
Amount used	Amount used per event	0.48 g
	Exposure duration	8 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35.70 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.4 Contributing scenario co	ntrolling consumer expe	osure for: PC4: Washing car window
	Concentration of the Substance in Mixture/Article	Covers product concentrations up to 1%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	0.5 g
	Exposure duration	0.02 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.
	ntrolling consumer expe	osure for: PC4: Pouring into radiator
_	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	2000 g
	Exposure duration	0.17 h
Frequency and duration of use	Frequency of use	365 days/year
,	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428 cm ²
Other given operational	Room size	34 m3
	i -	I .
conditions affecting consumers exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.

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	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	4 g	
	Exposure duration	0.25 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 214.4 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.	
	ntrolling consumer expe	osure for: PC9a: Waterborne latex wall paint	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1,5%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2760 g	
	Exposure duration	2.2 h	
Frequency and duration of use	Frequency of use	4 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428.75 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
2.8 Contributing scenario co water borne paint	ntrolling consumer expo	osure for: PC9a: Solvent rich, high solid,	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 27,5%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	744 g	
	Exposure duration	2.2 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 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.		
-	•	osure for: PC9a: Aerosol spray can	
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Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Troduct orial action of the	Physical Form (at time of use)	spray aerosol
Amount used	Amount used per event	215 g
	Exposure duration	0.33 min
Frequency and duration of use	Frequency of use	2 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²
Other given operational	Room size	34 m3
conditions affecting consumers exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.
	controlling consumer e	exposure for: PC9a: Removers (paint-, glue-,
wall paper-, sealant-remo		saposure for. 1 ood. Kemovers (paint, gide,
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	491 g
	Exposure duration	2 h
Frequency and duration of use	Frequency of use	3 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.11 Contributing scenario	controlling consumer e	exposure for: PC9b: Fillers and putty
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	85 g
	Exposure duration	4 h
Frequency and duration of use	Frequency of use	12 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35.73 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.12 Contributing scenario equalizers	controlling consumer e	exposure for: PC9b: Plasters and floor
Product characteristics	Concentration of the	Covers concentrations up to 2%
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	Substance in Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	13800 g	
	Exposure duration	2 h	
Frequency and duration of use	Frequency of use	12 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure		ousehold ventilation., Covers use at ambient	
	temperatures.	avenacius for DCOk. Madalling alay	
2.13 Contributing Scenario	Concentration of the	exposure for: PC9b: Modelling clay	
Product characteristics	Substance in Mixture/Article	Covers product concentrations up to 1%	
Troduct characteristics	Physical Form (at time of use)	solid	
Amount used	Amount used per event	1 g	
	Exposure duration	8 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 254.4 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
2.14 Contributing scenario	controlling consumer e	exposure for: PC9c: Finger paints	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	1.35 g	
	Exposure duration	8 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 254.4 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical 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%	

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.15 Contributing scenario		exposure for: PC24: Liquids	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 100%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2200 g	
	Exposure duration 0.17 h		
Frequency and duration of use	Frequency of use 4 days/year		
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 468 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers		rage (34m³) under typical ventilation.	
exposure 2.16 Contributing scenario		exposure for: PC24: Pastes	
2.10 Continuuting Scenario	Concentration of the	Aposule Iol. I OZT. Fastes	
	Substance in Mixture/Article	Covers concentrations up to 20%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	34 g	
	Exposure duration	e duration 8 h	
Frequency and duration of use	Frequency of use	10 days/year	
	Frequency of use 1 Times per day		
Human factors not influenced by risk management	Exposed skin areas Covers skin contact area up to 468 cm ²		
Other given operational	Room size 20 m3		
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.17 Contributing scenario	controlling consumer e	exposure for: PC24: Sprays	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
, round official designation	Physical Form (at time of use)	spray aerosol	
Amount used	Amount used per event	73 g	
	Exposure duration	0.17 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by isk management	Exposed skin areas	Covers skin contact area up to 428.75 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
2.18 Contributing scenario washing products		exposure for: PC35: Laundry and dish	

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	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5 %.
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	15 g
	Exposure duration	0.5 h
Frequency and duration of use	Frequency of use	365 days/year
•	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
		exposure for: PC35: Cleaners, liquids (all ers, glass cleaners, carpet cleaners, metal
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
	Exposure duration	0.33 h
Frequency and duration of use	Frequency of use	128 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.20 Contributing scenario	controlling consumer e	exposure for: PC38
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 20%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	12 g
	Exposure duration	1 h
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.	
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3.	Exposure estimation and reference to its source
	ironment
No i	information available.
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	exposure assessment presented for human health. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the
	Exposure Scenario
Oı wi	nly properly trained persons shall make use of scaling methods while checking whether the OC and RMM are thin the boundaries set by the ES

1. Short title of Exposure Scenario 8: Use in Cleaning Agents			
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE available		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems		

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8d

Substance is a unique structure, Readily biodegradable.

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

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

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

from source towards the worker	windows etc. Controlled ventilation means air is supplied or removed by a powered fan.
	Sample via a closed loop or other system to avoid exposure.
	Handle substance within a closed system.(PROC1, PROC2, PROC3)
	Ensure material transfers are under containment or extract ventilation.
	or
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)
	or
	Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)
	Ensure material transfers are under containment or extract ventilation.
	or
	Limit the substance content in the mixture to 25 %.(PROC10)
	or
	Avoid carrying out operation for more than 4 hours.(PROC10)
	Ensure material transfers are under containment or extract ventilation.
	or
	Limit the substance content in the mixture to 25 %.
	Ensure operation is undertaken outdoors.
	Avoid carrying out operation for more than 4 hours.(PROC11)
	or
	Avoid carrying out operation for more than 1 hour.(PROC11)
	Avoid carrying out operation for more than 1 hour.(PROC19)
	Use suitable eye protection.
	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'
	employee training.
Conditions and measures related to personal protection, hygiene and health evaluation	If above technical/organisational control measures are not feasible, then adopt following PPE:
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)
	If above technical/organisational control measures are not feasible, then adopt
	following PPE:
	Limit the substance content in the mixture to 25 %.
	Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
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
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PROC8b		Inhalation	350ppm	0.70
PROC5, PROC8a, PROC13		Dermal	13.71mg/kg/day	0.07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC5, PROC8a, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20
PROC5	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70
PROC8a		Dermal	0.14mg/kg/day	0.001
PROC10		Dermal	1.37mg/kg/day	0.007
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16.46mg/kg/day	0.09
PROC10		Dermal	27.43mg/kg/day	0.15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40
PROC11		Dermal	2.14mg/kg/day	0.01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0.50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64.28mg/kg/day	0.35
PROC11		Dermal	107.14mg/kg/day	0.58
PROC11		Inhalation	300ppm	0.60
PROC11	half mask	Inhalation	100ppm	0.20
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16.97mg/kg/day	0.09
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0.60

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

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

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

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

Environment

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For scaling see ECT Tool:

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

Health

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

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(http://cefic.org/templates/shwPublications.asp?HI	D=750)	
Additional good practice advice beyond the REAG	CH Chemical Safety Assessment	
Assumes a good basic standard of occupational hyg	iene is implemented.	
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1. Short title of Exposure Scenario 9: Use in laboratories		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
PROC10: Roller application or brushing Process categories 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	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)			
(source) to prevent release Technical onsite conditions and measures to reduce or limit	Air	Closed system, or, Treated by scrubbers			
	Air	or, Charcoal adsorbers			
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.				
Organizational measures to prevent/limit release from the site					
Conditions and measures related to external treatment of waste for	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.				
disposal					
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulation				
to external recovery of waste					

2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15, PROC19

3	<u> </u>	, ,		
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
Technical conditions and	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors,			

measures to control dispersion windows etc. Controlled ventilation means air is supplied or removed by a from source towards the worker powered fan.

Conditions and measures related Use suitable eye protection. to personal protection, hygiene 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.

and health evaluation

Workers

PROC10, PROC15, PROC19: ECETOC TRA

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Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10, PROC19		Inhalation	250ppm	0.50
PROC10		Dermal	27.43mg/kg/day	0.15
PROC15		Inhalation	50ppm	0.10
PROC15		Dermal	0.34mg/kg/day	0.00
PROC19	with gloves	Dermal	28.29mg/kg/day	0.15

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

ACETONE					
1. Short title of Exposure Sco	enario 10: Use in laborat	ories			
Main User Groups	entertainment, services, cra	•			
Process categories	PROC10: Roller application PROC15: Use as laborator PROC19: Hand-mixing with				
Environmental Release Categories	ERC8a: Wide dispersive in	door use of processing aids in open systems			
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a			
Substance is a unique structure	e, Readily biodegradable.				
Amount used	To be defined by site				
Frequency and duration of use	Continuous exposure	360 days/year			
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.				
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)			
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers			
measures to reduce or limit	Air	or, Charcoal adsorbers			
discharges, air emissions and releases to soil Organizational measures to	Common practices vary ac estimates used.	ross sites thus conservative process release			
prevent/limit release from the site					
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of war according to local regulation	ste in accordance with environmental legislation and ns.			
Conditions and measures related to external recovery of waste	If recycling is not practicable	le, dispose of in compliance with local regulations.			
2.2 Contributing scenario co	ntrolling worker exposu	re for: PROC10, PROC15, PROC19			
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	> 10 kPa			
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).			
Technical conditions and	windows etc. Controlled ve powered fan.	general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a			
measures to control dispersion from source towards the worker					
	or Avoid carrying out operation for more than 4 hours.(PROC10)				
Conditions and reserves related		n for more than 1 hour.(PROC19)			
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection Wear chemically resistant of employee training.	n. gloves (tested to EN374) in combination with 'basic'			

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

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

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC10, PROC15, PROC19: ECETOC TRA

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20
PROC10		Dermal	1.37mg/kg/day	0.007
PROC15		Inhalation	50ppm	0.10
PROC15		Dermal	0.34mg/kg/day	0.002
PROC19	Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0.60
PROC19	Concentration of substance in product: 5% - 25%, with gloves	Dermal	16.97mg/kg/day	0.09

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

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Chemical product category Environmental Release Categories 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 Other given operational conditions and measures to preventilimit releases to soil to external treatment of waste for disposal to external retartment of waste for disposal of external recovery of waste 2.2 Contributing scenario controlling consumer exposure for: PC4: Washing car window pressure Product characteristics Product	ACETONE				
Chemical product category Environmental Release Categories 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 Other given operational conditions affecting environmental exposure Technical conditions and measures to prevent felease store local conditions and essays to reduce or limit discharges, air emissions and releases to soil to external treatment of waste for disposal Conditions and measures related to external retartment of waste for disposal Product characteristics Product characteristics Product characteristics Conductions and duration of use Exposure Quration Amount used per event Concentration of the Substance in Mixture/Article Prysical Form (at time of use) Exposure duration Frequency of use Freque	1. Short title of Exposure Sco	enario 11: Use in de-icin	g and anti-icing applications		
ERC8d: Wide dispersive outdoor use of processing aids in open systems Categories ERC8d: Wide dispersive outdoor use of processing aids in open systems Categories Substance is a unique structure, Readily biodegradable. Amount used To be defined by site Frequency and duration of use Other given operational conditions and receive or limit discharges, air emissions and releases to soil Organizational measures to provent release from the site Conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to preventilimit release from the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario controlling consumer exposure for: PC4: Washing car window Concentration of the Substance in Mixture/Article Physical Form (at time of Use) Vapour pressure 2.3 Contributing scenario controlling consumer exposure for: PC4: Washing car window Concentration of the Substance in 1 frequency of use 1 frequency of use 1 frequency of use 365 days/year Frequency and duration of use Frequency and duration of use Frequency and duration of use Frequency and curation of use Frequency of use 365 days/year Frequency of use 15 f	Main User Groups	SU 21: Consumer uses: Pr	ivate households (= general public = consumers)		
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 Indoor/Outdoor use. Air John Street (Source) to prevent release Technical conditions and measures to process level (Source) to prevent release Technical constitions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to preventifulimit release from the site Conditions and measures to great the street of the site Conditions and measures to great the street of the site Conditions and measures to great the street of the site Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external treatment of waste for disposal Conditions and measures related to external recovery of waste 2.2 Contributing scenario controlling consumer exposure for: PC4: Washing car window Product characteristics Product characteristics Product characteristics Air Closed system, or, Treated by scrubbers Air Closed system, or, Treated by scrubbers at in accordance with environmental legislation and according to local regulations. Concentration of the Substance in Mixture/Article Physical Form (at time of use) Exposure duration In recycling is not practicable, dispose of in compliance with local regulations. Covers percentage substance in the product up to 1 %. Exposure duration of the Substance in Mixture/Article Physical Form (at time of use) Exposure duration Indoor/Outdoor use. Treat air remission to provide a typical removal efficiency: 90 %) Conditions and nessures related to external reasons	Chemical product category				
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Amount used To be defined by site Frequency and duration of use Continuous exposure Indoor/Outdoor use. Indoo	2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8d		
Continuous exposure 360 days/year	Substance is a unique structur	e, Readily biodegradable.	·		
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Product characteristics Concentration of the Substance in Mixture/Article	to external recovery of waste	in recycling is not practical	e, dispose of in compilative with local regulations.		
Product characteristics Substance in Mixture/Article Mixture/	2.2 Contributing scenario co	ntrolling consumer expe	osure for: PC4: Washing car window		
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Amount used Amount used per event 0.5 g Exposure duration 0.02 h Frequency and duration of use 7 Frequency of use 365 days/year 8 Frequency of use 1 Times per day 9 Human factors not influenced by risk management 7 Other given operational conditions affecting consumers exposure 8 Covers use in a one car garage (34m³) under typical ventilation. Concentration of the Substance in Mixture/Article 7 Physical Form (at time of use) 1 Physical Form (at time of use) 240 hPa Amount used Amount used per event 2000 g	Product characteristics		liquid		
Frequency and duration of use Frequency of use 365 days/year		Vapour pressure	240 hPa		
Frequency and duration of use Frequency of use 365 days/year	Amount used	Amount used per event	0.5 g		
Human factors not influenced by risk management Other given operational conditions affecting consumers exposure 2.3 Contributing scenario controlling consumer exposure for: PC4: Pouring into radiator Covers concentrations up to 10% Mixture/Article Physical Form (at time of use) Vapour pressure Amount used Frequency of use 1 Times per day Covers skin contact area up to 6600 cm² 34 m3 Covers use in a one car garage (34m³) under typical ventilation. Covers concentrations up to 10% liquid Vapour pressure 240 hPa Amount used Amount used per event 2000 g		·			
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Covers use in a one car garage (34m³) under typical ventilation. 2.3 Contributing scenario controlling consumer exposure for: PC4: Pouring into radiator Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used Covers concentrations up to 10% liquid Vapour pressure 240 hPa Amount used Amount used per event 2000 g		Room size	34 m3		
Product characteristics Concentration of the Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used Covers concentrations up to 10% Iiquid 240 hPa Amount used Amount used per event 2000 g	conditions affecting consumers exposure				
Product characteristics Substance in Mixture/Article Physical Form (at time of use) Vapour pressure Amount used Amount used Covers concentrations up to 10% liquid 240 hPa 2000 g	2.3 Contributing scenario co	ntrolling consumer expe	osure for: PC4: Pouring into radiator		
Amount used		Substance in	Covers concentrations up to 10%		
Amount used Amount used per event 2000 g	Product characteristics		liquid		
		Vapour pressure	240 hPa		
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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	Exposed skin areas	Covers skin contact area up to 428 cm ²		
risk management				
Other given operational conditions affecting consumers exposure	Room size	34 m3		
	Covers use in a one car garage (34m³) under typical ventilation.			

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

214 Continuating Coonaire Co	2.4 Contributing Sociatio Controlling Consumer Exposure for 1 C4. Look de foci				
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%			
Product characteristics	Physical Form (at time of use)	liquid			
	Vapour pressure	240 hPa			
Amount used	Amount used per event	4 g			
	Exposure duration	0.25 h			
Frequency and duration of use	Frequency of use	365 days/year			
	Frequency of use	1 Times per day			
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 214.4 cm ²			
risk management					
Other given operational	Room size	34 m3			
conditions affecting consumers exposure	Covers use in a one car garage (34m³) under typical ventilation.				

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

No exposure assessment presented for human health.

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

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

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1. Short title of Exposure Scenario 12: Use in de-icing and anti-icing applications		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional contro PROC8b: Transfer of substance or preparation (charging/ discharges) vessels/ large containers at dedicated facilities PROC11: Non industrial spraying PROC19: Hand-mixing with intimate contact and only PPE available.		
Environmental Release Categories	ERC8d: Wide dispersive outdoor use of processing aids in open systems	

2.1 Contributing scenario controlling environmental exposure for: ERC8d

Substance is a unique structure, Readily biodegradable.

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

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8b, PROC11, PROC19

Concentration of the

Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Physical Form (at time of use)	liquid	
Vapour pressure	> 10 kPa	
Covers daily exposures up to 8 hours (unless stated differently).		
Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Sample via a closed loop or other system to avoid exposure.		
Handle substance within a closed system.(PROC1, PROC2)		
Ensure material transfers are under containment or extract ventilation. or		
Limit the substance content in the mixture to 25 %.		
Avoid carrying out operation for more than 4 hours.(PROC11)		
	Mixture/Article Physical Form (at time of use) Vapour pressure Covers daily exposures up Locate bulk storage outdoor Provide a good standard of windows etc. Controlled very powered fan. Sample via a closed loop of Handle substance within a Ensure material transfers a or Limit the substance content Ensure operation is undertal	

	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

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

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

ACETONE Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may risks are managed to at least equivalent levels.

be necessary to define appropriate site-specific risk management measures.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that

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

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

ACETONE			
1. Short title of Exposure Sco	enario 13: Use in oil and	gas field drilling and production operations	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities		
Environmental Release Categories	ERC4: Industrial use of propart of articles	cessing aids in processes and products, not becoming	
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC4	
Substance is a unique structure	e, Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary ac estimates used.	ross sites thus conservative process release	
prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of war according to local regulation	ste in accordance with environmental legislation and ns.	
Conditions and measures related to external recovery of waste	If recycling is not practicable	e, dispose of in compliance with local regulations.	
2.2 Contributing scenario co PROC8a, PROC8b	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC4,	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 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.		
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3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4		Dermal	6.86mg/kg/day	0.04
PROC8a		Inhalation	250ppm	0.50
PROC8a		Dermal	13.71mg/kg/day	0.07
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

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ACETONE				
1. Short title of Exposure Sc	enario 14: Use in oil an	d 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 co	ontrolling environmenta	al exposure for: ERC8d		
Substance is a unique structur	re, Readily biodegradable	э.		
Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure	360 days/year		
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers		
measures to reduce or limit	Air or, Charcoal adsorbers			

7 11.10 11.11 11.00 11	To be defined by the		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for	Toolitain and dispose of waste in accordance with children and registation and		
disposal			
Conditions and measures related	If recycling is not practicable, dispose of in compliance with local regulations.		
to external recovery of waste			

PROC8a, PROC8b			
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion from source towards the worker	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Ensure material transfers are under containment or extract ventilation.		
	or Ensure operation is undertaken outdoors.(PROC8a)		
	or		

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	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

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

	11.001,11.002,11.000,11.0003,11.0003. 202100 11.0				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC1		Inhalation	0.01ppm	0.00002	
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002	
PROC2		Inhalation	50ppm	0.10	
PROC2		Dermal	1.37mg/kg/day	0.01	
PROC3		Inhalation	100ppm	0.20	
PROC4, PROC8b		Inhalation	250ppm	0.50	
PROC4, PROC8b		Dermal	6.86mg/kg/day	0.04	
PROC8a		Dermal	0.14mg/kg/day	0.001	
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70	
PROC8a		Dermal	13.71mg/kg/day	0.07	
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60	
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20	

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

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R51389 / Version 7.0

1. Short title of Exposure Scenario 15: 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	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	ross sites thus conservative process release	
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
disposal			
Conditions and measures related	If recycling is not practicable, dispose of in compliance with local regulations.		
to external recovery of waste			

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC3, PROC5, PROC8a,

PROC8b		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).
Technical conditions and	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.	
measures to control dispersion	Handle substance within a closed system (PROC1, PROC3)	
from source towards the worker	Ensure material transfers are under containment or extract ventilation.	
	or Ensure operation is undertaken outdoors.(PROC5, PROC8a)	
	or Avoid carrying out operatio	n for more than 4 hours.(PROC5, PROC8a)

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ΕN

Conditions and measures related to personal protection, hygiene and health evaluation Use suitable eye protection.

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

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC3, PROC5, PROC8a: ECETOC TRA

	11001,11000,11000,11000				
Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC1		Inhalation	0.01ppm	0.00002	
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002	
PROC3, PROC5		Inhalation	100ppm	0.20	
PROC5		Dermal	0.07mg/kg/day	0.00	
PROC5		Inhalation	350ppm	0.70	
PROC5		Dermal	13.71mg/kg/day	0.07	
PROC5		Inhalation	300ppm	0.60	
PROC8a		Dermal	0.14mg/kg/day	0.001	
PROC8a		Dermal	13.71mg/kg/day	0.07	
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20	
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70	
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60	

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

1. Short title of Exposure Scenario 16: Use as processing aid				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent			
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)			

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

Substance is a unique structure, Readily biodegradable.

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

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, 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
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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.	
nom source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)	
Conditions and measures related to personal protection, hygiene and health evaluation Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combinate employee training.		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC14, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a, PROC10		Inhalation	250ppm	0.50
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC14, PROC15		Dermal	0.34mg/kg/day	0.00

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

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

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

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

Environment

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

1. Short title of Exposure Scenario 17: Uses in coatings				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available			
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles			

2.1 Contributing scenario controlling environmental exposure for: ERC4

Substance is a unique structure, Readily biodegradable.

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

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

1 11000, 1 110010, 1 110000, 1 110010, 1 110010, 1 110010				
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).			
Technical conditions and	Locate bulk storage outdoors.			
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measures to control dispersion from source towards the worker	Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
	Sample via a closed loop or other system to avoid exposure.		
	Handle substance within a closed system.(PROC1, PROC2, PROC3)		
	Ensure material transfers are under containment or extract ventilation.		
	or		
	Ensure operation is undertaken outdoors.(PROC7)		
	Use suitable eye protection.		
Conditions and measures related to personal protection, hygiene and health evaluation	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

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC8a, PROC10, PROC13, PROC19		Inhalation	250ppm	0.50
PROC5, PROC8a, PROC13		Dermal	13.71mg/kg/day	0.07
PROC7	with local exhaust 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

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PROC19	with gloves	Dermal	28.29mg/kg/day	0.15
be necessa Where othe risks are ma Only proper within the b Environmer For scaling ECT: http:// reachconso Health	ry to define appropriate or Risk Management Meanaged to at least equivally trained persons shall oundaries set by the ES at see ECT Tool: www.reachcentrum.eu/eortium/phenol-derivatives	site-specific risk managem asures/Operational Conditi alent levels. make use of scaling metho en/consortiummanagement s-dossiers.aspx	ions are adopted, then users shoods while checking whether the of the other than	ould ensure that OC and RMM are
	see: GES Worker Chemorg/templates/shwPublic	nical Safety Assessment (C cations.asp?HID=750)	CSA) Template	
	•	yond the REACH Chemic ccupational hygiene is imp	•	

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1. Short title of Exposure Sco			
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)		
Chemical product category	PC1: Adhesives, sealants PC4: Anti-Freeze and de-icing products PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC9c: Finger paints PC15: Non-metal-surface treatment products PC24: Lubricants, greases, release products PC31: Polishes and wax blends		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		
2.1 Contributing scenario co	ntrolling environmental	exposure for: ERC8a, ERC8c, ERC8d, ERC8f	
Substance is a unique structur	e, Readily biodegradable.		
Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level (source) to prevent release	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil Organizational measures to	Common practices vary ac estimates used.	ross sites thus conservative process release	
prevent/limit release from the site Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation and according to local regulations.		
Conditions and measures related to external recovery of waste	If recycling is not practicab	le, dispose of in compliance with local regulations.	
	ntrolling consumer expe	osure for: PC1: Glues, hobby use	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	9 g	
	Exposure duration	< 4 h	
Frequency and duration of use	Frequency of use	< 365 days/year	
Human factors not influenced by risk management	Frequency of use Exposed skin areas	1 Times per day Covers skin contact area up to 35.73 cm²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
D=1000 (N/ : = 0			
R51389 / Version 7.0	72/102	EN	

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2.3 Contributing scenario co tile glue, wood parquet g		osure for: PC1: Glues DIY-use (carpet glue,	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	6390 g	
	Exposure duration	6 h	
Frequency and duration of use	Frequency of use	1 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 110 cm ²	
risk management Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
2.4 Contributing scenario co	ntrolling consumer expo	osure for: PC1: Glue from spray	
Draduct above storiction	Concentration of the Substance in Mixture/Article	Covers concentrations up to 30%	
Product characteristics	Physical Form (at time of use)	spray aerosol	
Amount used	Amount used per event	85.05 g	
	Exposure duration	4 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35.73 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
2.5 Contributing scenario co	ntrolling consumer expo	osure for: PC4: Washing car window	
	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 1 %.	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	0.5 g	
	Exposure duration	0.02 h	
Frequency and duration of use	Frequency of use	365 days/year	
•	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure		urage (34m³) under typical ventilation.	
	ntrolling consumer expo	osure for: PC4: Pouring into radiator	
R51389 / Version 7.0	73/102	EN	

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	Concentration of the Substance in Mixture/Article	Covers concentrations up to 10%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2000 g	
	Exposure duration	0.17 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.	
2.7 Contributing scenario co	ntrolling consumer expo	osure for: PC4: Lock de-icer	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	4 g	
	Exposure duration	0.25 h	
Frequency and duration of use	Frequency of use	365 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 214.4 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car ga	rage (34m³) under typical ventilation.	
	ntrolling consumer expo	osure for: PC9a: Waterborne latex wall paint	
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 1,5%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	2760 g	
	Exposure duration	2.2 h	
Frequency and duration of use	Frequency of use	4 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 428.75 cm ²	
Other given operational	Room size	20 m3	
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient	
2.9 Contributing scenario co water borne paint, PC15:	ntrolling consumer expo	osure for: PC9a: Solvent rich, high solid, , water borne paint	
Product characteristics	Concentration of the	Covers concentrations up to 27,5%	
R51389 / Version 7.0	74/102	EI	

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	Substance in Mixture/Article		
	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	744 g	
	Exposure duration	2.2 h	
Frequency and duration of use	Frequency of use	6 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 482.75 cm ²	
risk management Other given energtional	Room size	20 m3	
Other given operational conditions affecting consumers exposure	Covers use under typical h	ousehold ventilation., Covers use at ambient	
·	temperatures.	(DOS 4 DOS	
2.10 Contributing scenario Aerosol spray can	controlling consumer e	exposure for: PC9a: Aerosol spray can, PC15	
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Troduct orial dottorionous	Physical Form (at time of use)	spray aerosol	
Amount used	Amount used per event	215 g	
	Exposure duration	0.33 h	
Frequency and duration of use	Frequency of use	2 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 6600 cm ²	
Other given operational	Room size	34 m3	
conditions affecting consumers exposure	Covers use in a one car ga	arage (34m³) under typical ventilation.	
2.11 Contributing scenario		exposure for: PC9a: Removers (paint-, glue-, paint-, glue-, wall paper-, sealant remover)	
wan paper-, sealant-reinc	Concentration of the		
	Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	491 g	
	Exposure duration	2 h	
Frequency and duration of use	Frequency of use	3 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm ²	
Other given operational	Room size 20 m3		
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		
•		exposure for: PC9b: Fillers and putty	
Product characteristics	Concentration of the Substance in	Covers concentrations up to 2%	
R51389 / Version 7.0	75/102	E	

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	Mixture/Article	
	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	85 g
	Exposure duration	4 h
Frequency and duration of use	Frequency of use	12 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 35.73 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.13 Contributing scenario equalizers	controlling consumer e	exposure for: PC9b: Plasters and floor
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 2%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	13800 g
	Exposure duration	2 h
Frequency and duration of use	Frequency of use	12 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 857.5 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical h temperatures.	ousehold ventilation., Covers use at ambient
2.14 Contributing scenario	controlling consumer e	exposure for: PC9c: Finger paints
	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	240 hPa
Amount used	Amount used per event	1.35 g
Frequency and duration of use	Frequency of use	365 days/year
	Frequency of use	1 Times per day
Human factors not influenced by risk management	Exposed skin areas	Covers skin contact area up to 254.4 cm ²
Other given operational	Room size	20 m3
conditions affecting consumers exposure	Covers use under typical 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%
R51389 / Version 7.0	76/102	EN
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2.15 Contributing scenario controlling consumer exposure for: PC24: Sprays				
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%		
Trought characteristics	Physical Form (at time of use) spray aerosol			
Amount used	Amount used per event 73 g			
	Exposure duration	0.17 h		
Frequency and duration of use	Frequency of use	6 days/year		
	Frequency of use	1 Times per day		
Human factors not influenced by	Exposed skin areas Covers skin contact area up to 428.75 cm ²			
risk management				
Other given operational	Room size 20 m3			
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.			

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

	Concentration of the Substance in Mixture/Article	Covers concentrations up to 50%	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	240 hPa	
Amount used	Amount used per event	142 g	
	Exposure duration	1.23 h	
Frequency and duration of use	Frequency of use	29 days/year	
	Frequency of use	1 Times per day	
Human factors not influenced by	Exposed skin areas	Covers skin contact area up to 430 cm ²	
risk management			
Other given operational	Room size 20 m3		
conditions affecting consumers exposure	Covers use under typical household ventilation., Covers use at ambient temperatures.		

3. Exposure estimation and reference to its source

Environment

No information available.

Consumers

No exposure assessment presented for human health.

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

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

1. Short title of Exposure Scenario 19: Uses in coatings				
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent PROC19: Hand-mixing with intimate contact and only PPE available			
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix			

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8c, ERC6d, ERC8f

Substance is a unique structure, Readily biodegradable.

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

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, 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).
	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.
	Ensure operation is undertaken outdoors.(PROC5, PROC8a)
Technical conditions and	or Avoid carrying out operation for more than 4 hours.(PROC5, PROC8a)
measures to control dispersion	Ensure material transfers are under containment or extract ventilation.
from source towards the worker	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.
	Limit the substance content in the mixture to 25 %.
	Ensure operation is undertaken outdoors.
	Avoid carrying out operation for more than 4 hours.(PROC11)
	Or
	Avoid carrying out operation for more than 1 hour.(PROC11) Avoid carrying out operation for more than 1 hour.(PROC19)
	Use suitable eye protection.
	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Conditions and measures related	If above technical/organisational control measures are not feasible, then adopt
to personal protection, hygiene and health evaluation	following PPE:
	Wear a respirator conforming to EN140 with Type A filter or better.(PROC11) If above technical/organisational control measures are not feasible, then adopt
	following PPE:
	Limit the substance content in the mixture to 25 %.
	Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC15, PROC19: 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,		Inhalation	250ppm	0.50

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

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

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Assumes a good basic standard of occupational hygiene is implemented.	_

1. Short title of Exposure Scenario 20: Use as binders and release agents			
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring		
Environmental Release Categories	ERC5: Industrial use resulting in inclusion into or onto a matrix		

2.1 Contributing scenario controlling environmental exposure for: ERC5

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Toolitain and dispose of waste in accordance with chimerital registation and		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
		(DDAA4 DDAAA DDAAA DDAA4	

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13

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

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a		Inhalation	250ppm	0.50
PROC5		Dermal	13.71mg/kg/day	0.07
PROC6		Dermal	27.43mg/kg/day	0.15
PROC7	with local exhaust ventilation, (95% efficiency)	Inhalation	25ppm	0.05
PROC7		Dermal	2.14mg/kg/day	0.01
PROC7		Inhalation	350ppm	0.70
PROC7		Dermal	42.86mg/kg/day	0.23
PROC7	half mask	Inhalation	50ppm	0.10
PROC8a		Dermal	13.71mg/kg/day	0.07
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC10		Inhalation	250ppm	0.50
PROC10		Dermal	27.34mg/kg/day	0.15
PROC13		Inhalation	250ppm	0.50
PROC13		Dermal	13.71mg/kg/day	0.074

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

ACETONE Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES Environment For scaling see ECT Tool: ECT: http://www.reachcentrum.eu/en/consortiummanagement/consortia-under-reach/phenol-derivativesreachconsortium/phenol-derivatives-dossiers.aspx For scaling see: GES Worker Chemical Safety Assessment (CSA) Template (http://cefic.org/templates/shwPublications.asp?HID=750) Additional good practice advice beyond the REACH Chemical Safety Assessment Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 21: Use as binders and release agents				
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC11: Non industrial spraying			
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix			

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

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for disposal	Contain and diopose of Macto in accordance min criminal indication		
Conditions and measures related to external recovery of waste	If recycling is not practicable, dispose of in compliance with local regulations.		
		(DD004 DD000 DD000 DD004	

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 outdood Provide a good standard of windows etc. Controlled very powered fan. Sample via a closed loop of Handle substance within a Ensure material transfers a or Ensure operation is undertator. Avoid carrying out operation Ensure material transfers a or Limit the substance content or Avoid carrying out operation or Ensure material transfers a or Limit the substance content or Ensure material transfers a or Limit the substance content or Ensure material transfers a or Limit the substance content or Ensure material transfers a or Limit the substance content or Ensure material transfers a or Limit the substance content or Ensure operation is undertated avoid carrying out operation.	ors. f general ventilation. Natural ventilation is from doors, ntilation means air is supplied or removed by a crother system to avoid exposure. closed system.(PROC1, PROC2, PROC3) are under containment or extract ventilation. aken outdoors.(PROC5, PROC8a) In for more than 4 hours.(PROC5, PROC8a) aken outdoors. In for more than 4 hours.(PROC6) Irre under containment or extract ventilation. It in the mixture to 25 %.(PROC10) Irre under containment or extract ventilation. It in the mixture to 25 %.	
	or Avoid carrying out operatio	n for more than 1 hour.(PROC11)	
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. If above technical/organisational control measures are not feasible, then adopt following PPE: Wear a respirator conforming to EN140 with Type A filter or better.(PROC11)		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC10, PROC11: 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,	Outdoor use., 30%	Inhalation	350ppm	0.70	
R51389 / Versi	R51389 / Version 7.0 86/102 EN				

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PROC8a	efficiency			
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC5, PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC6	Outdoor use., 30% efficiency	Inhalation	420ppm	0.84
PROC6		Dermal	27.43mg/kg/day	0.15
PROC6	during 1 - 4 hours	Inhalation	360ppm	0.72
PROC8a		Dermal	0.14mg/kg/day	0.001
PROC8a		Dermal	13.71mg/kg/day	0.50
PROC8b		Inhalation	250ppm	0.50
PROC8b		Dermal	6.86mg/kg/day	0.04
PROC9		Inhalation	250ppm	0.50
PROC9		Dermal	6.86mg/kg/day	0.04
PROC11	half mask	Inhalation	100ppm	0.20
PROC10		Dermal	1.37mg/kg/day	0.007
PROC10	during 1 - 4 hours, Concentration of substance in product: 5% - 25%	Inhalation	300ppm	0.60
PROC10	Concentration of substance in product: 5% - 25%	Dermal	16.46mg/kg/day	0.09
PROC10		Dermal	27.43mg/kg/day	0.15
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40
PROC11		Dermal	2.14mg/kg/day	0.01
PROC11	during 1 - 4 hours, Concentration of substance in product: 5% - 25%, Outdoor use., 30% efficiency	Inhalation	252ppm	0.50
PROC11	Concentration of substance in product: 5% - 25%	Dermal	64.28mg/kg/day	0.35
PROC11		Dermal	107.14mg/kg/day	0.58
PROC5, PROC10	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20

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

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

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

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

Environment For scaling see ECT Tool:

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

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1. Short title of Exposure So	enario 22: Use in agroc	hemicals	
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	Indoor/Outdoor upo		

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

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

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).	
Product characteristics	Physical Form (at time of use)	liquid	
	Vapour pressure	> 10 kPa	
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).		
Technical conditions and measures to control dispersion	Locate bulk storage outdoors. Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan.		
from source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2)		
	Ensure material transfers are under containment or extract ventilation. or		
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Ensure operation is undertaken outdoors.(PROC8a) Avoid carrying out operation for more than 4 hours. (PROC8a) Ensure material transfers are under containment or extract ventilation. Limit the substance content in the mixture to 25 %. Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 4 hours. (PROC11) Avoid carrying out operation for more than 1 hour. (PROC11) Avoid carrying out operation for more than 1 hour. (PROC19) 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 Conditions and measures related following PPE: to personal protection, hygiene Wear a respirator conforming to EN140 with Type A filter or better. (PROC11) and health evaluation If above technical/organisational control measures are not feasible, then adopt following PPE: Limit the substance content in the mixture to 25 %.

Wear suitable gloves tested to EN374.(PROC19)

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1		Dermal	0.34mg/kg/day	0.002
PROC2		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC4, PROC8b, PROC13		Inhalation	250ppm	0.50
PROC4, PROC8b		Dermal	6.86mg/kg/day	0.04
PROC8a	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20
PROC8a		Dermal	0.14mg/kg/day	0.001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70
PROC8a, PROC13		Dermal	13.71mg/kg/day	0.07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC11	during 15 mins - 1 hour, with local exhaust ventilation, 80% efficiency	Inhalation	200ppm	0.40
PROC11		Dermal	2.14mg/kg/day	0.01

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

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.

1. Short title of Exposure Scenario 23: Rubber production and processing			
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
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	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary ac estimates used.	cross sites thus conservative process release	
Organizational measures to prevent/limit release from the site			
Conditions and measures related 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 regularity recovery of waste		ole, dispose of in compliance with local regulations.	

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14

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

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC1		Inhalation	0.01ppm	0.00002	
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002	
PROC2, PROC14		Inhalation	50ppm	0.10	
PROC2		Dermal	1.37mg/kg/day	0.01	
PROC3, PROC4		Inhalation	100ppm	0.20	
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04	
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0.50	
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07	
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15	
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	
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PROC14			Dermal		0.34mg/kg/day	0.00
	e to Downstrea e Scenario	ım User t	to evaluate wheth	ner he wo	rks inside the bou	indaries set by the
be necessar Where other	y to define approp	oriate site- nt Measure	specific risk manage es/Operational Cond	ement meas	applicable to all sites ures. dopted, then users sl	
Only properl within the bo Environmen	ly trained persons oundaries set by th	shall mak		hods while	checking whether the	OC and RMM are
ECT: http://v				ent/consortia	a-under-reach/phenol	-derivatives-
For scaling s	see: GES Worker org/templates/shw		Safety Assessment ons.asp?HID=750)	(CSA) Tem	plate	
Additional go	od practice advi	ce beyond	d the REACH Chem	nical Safety	Assessment	
Assumes a go	ood basic standard	d of occup	oational hygiene is in	plemented		

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1. Short title of Exposure Scenario 24: Polymer production				
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites			
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC6: Calendering operations PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent			
Environmental Release Categories	ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers			

2.1 Contributing scenario controlling environmental exposure for: ERC6d

Substance is a unique structure, Readily biodegradable.

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

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

	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).
Product characteristics	Physical Form (at time of use)	liquid
	Vapour pressure	> 10 kPa
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently).	
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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.		
nom source towards the worker	Sample via a closed loop or other system to avoid exposure. Handle substance within a closed system.(PROC1, PROC2, PROC3)		
Conditions and measures related to personal protection, hygiene and health evaluation	Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.		

3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002
PROC2, PROC14, PROC15		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC3, PROC4		Inhalation	100ppm	0.20
PROC4, PROC9		Dermal	6.86mg/kg/day	0.04
PROC5, PROC6, PROC8a, PROC10, PROC13		Inhalation	250ppm	0.50
PROC5, PROC8a		Dermal	13.71mg/kg/day	0.07
PROC6, PROC10		Dermal	27.43mg/kg/day	0.15
PROC8b		Inhalation	150ppm	0.30
PROC8b		Dermal	6.86mg/kg/day	0.037
PROC9		Inhalation	200ppm	0.40
PROC13		Dermal	13.71mg/kg/day	0.074
PROC14, PROC15		Dermal	0.34mg/kg/day	0.00

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

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

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

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

Environment

For scaling see ECT Tool:

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

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А	L J E			N	

1. Short title of Exposure Scenario 25: Polymer production			
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)		
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation		
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix		

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

Substance is a unique structure, Readily biodegradable.

Amount used	To be defined by site		
Frequency and duration of use	Continuous exposure	360 days/year	
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.		
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)	
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers	
measures to reduce or limit	Air	or, Charcoal adsorbers	
discharges, air emissions and releases to soil	Common practices vary across sites thus conservative process release estimates used.		
Organizational measures to prevent/limit release from the site			
Conditions and measures related to external treatment of waste for	Toolitain and dispose of waste in accordance with chimolinicital regislation and		
disposal			
Conditions and measures related	If recycling is not practicable, dispose of in compliance with local regulations.		
to external recovery of waste			
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2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC8a, PROC8b, PROC9, PROC14

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

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

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1		Inhalation	0.01ppm	0.00002
PROC1, PROC14		Dermal	0.34mg/kg/day	0.002
PROC2		Inhalation	50ppm	0.10
PROC2		Dermal	1.37mg/kg/day	0.01
PROC8a, PROC14	with local exhaust ventilation, 80% efficiency	Inhalation	100ppm	0.20
PROC8a		Dermal	0.14mg/kg/day	0.001
PROC8a	Outdoor use., 30% efficiency	Inhalation	350ppm	0.70
PROC8a		Dermal	13.71mg/kg/day	0.07
PROC8a	during 1 - 4 hours	Inhalation	300ppm	0.60
PROC8b, PROC9		Inhalation	250ppm	0.50
PROC8b, PROC9		Dermal	6.86mg/kg/day	0.04
PROC14	during 1 - 4 hours	Inhalation	300ppm	0.002

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

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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

ACETONE		
(http://cefic.org/templates/shwPublications.asp?HID		
Additional good practice advice beyond the REAG		
Assumes a good basic standard of occupational hyg	iene is implemented.	
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1. Short title of Exposure Sco	enario 26: Use as blowin	g 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 co	ntrolling environmental	exposure for: ERC4, ERC10a		
Substance is a unique structure	e, Readily biodegradable.			
Amount used	To be defined by site			
Frequency and duration of use	Continuous exposure	360 days/year		
Other given operational conditions affecting environmental exposure	Indoor/Outdoor use.			
Technical conditions and measures at process level	Air	Treat air emission to provide a typical removal efficiency of (%): (Efficiency: 90 %)		
(source) to prevent release Technical onsite conditions and	Air	Closed system, or, Treated by scrubbers		
measures to reduce or limit	Air	or, Charcoal adsorbers		
discharges, air emissions and releases to soil Organizational measures to	Common practices vary across sites thus conservative process release estimates used.			
prevent/limit release from the site				
Conditions and measures related to external treatment of waste for disposal	Contain and dispose of waste in accordance with environmental legislation ar 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.			
	ntrolling worker exposu	re for: PROC1, PROC2, PROC3, PROC8b,		
·	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 % (unless stated differently).		
Product characteristics	Physical Form (at time of use)	liquid		
	Vapour pressure	> 10 kPa		
Frequency and duration of use	Covers daily exposures up	to 8 hours (unless stated differently).		
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.			
Conditions and measures related to personal protection, hygiene and health evaluation	Handle substance within a closed system.(PROC1, PROC2, PROC3) Use suitable eye protection. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.			
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3. Exposure estimation and reference to its source

Environment

No information available.

Workers

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

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Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR	
PROC1		Inhalation	0.01ppm	0.00002	
PROC1, PROC3		Dermal	0.34mg/kg/day	0.002	
PROC2		Inhalation	50ppm	0.10	
PROC2		Dermal	1.37mg/kg/day	0.01	
PROC3, 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

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

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

Environment

For scaling see ECT Tool:

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

Health

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

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

Additional good practice advice beyond the REACH Chemical Safety Assessment

Assumes a good basic standard of occupational hygiene is implemented.