

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

## **SULPHAMIC ACID**

Version 3.0

Print Date 2013/01/18

Revision date / valid from 2013/01/18

**MSDS code: MSUL100**

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

#### **1.1. Product identifier**

Trade name : SULPHAMIC ACID  
 Substance name : sulphamidic acid  
 Index-No. : 016-026-00-0  
 CAS-No. : 5329-14-6  
 EC-No. : 226-218-8  
 Registration number : 01-2119488633-28-xxxx

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

Use of the Substance/Mixture : At this time we do not yet have information on identified uses. They will be included in this safety data sheet when available.  
 Uses advised against : At this moment we have not identified any uses advised against

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

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

#### **1.4. Emergency telephone number**

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

### **Section 2: Hazards identification**

#### **2.1. Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

<b>REGULATION (EC) No 1272/2008</b>			
<b>Hazard class</b>	<b>Hazard category</b>	<b>Target Organs</b>	<b>Hazard statements</b>
Serious eye damage/eye irritation	Category 2	---	H319

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Skin corrosion/irritation	Category 2	---	H315
Chronic aquatic toxicity	Category 3	---	H412

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

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

Directive 67/548/EEC or 1999/45/EC	
Hazard symbol / Category of danger	Risk phrases
Irritant (Xi)	R36/38
	R52, R53


For the full text of the R-phrases mentioned in this Section, see Section 16.

### Most important adverse effects

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

## 2.2. Label elements

### Labelling according to Regulation (EC) No 1272/2008

- Hazard symbols : 
- Signal word : Warning
- Hazard statements : H319 Causes serious eye irritation.  
H315 Causes skin irritation.  
H412 Harmful to aquatic life with long lasting effects.
- Precautionary statements
- Prevention : P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P273 Avoid release to the environment.
- Response : P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical advice/

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Disposal : P302 + P352 attention.  
 IF ON SKIN: Wash with plenty of soap and water.

Disposal : P501 Dispose of contents/ container to an approved waste disposal plant.

### Hazardous components which must be listed on the label:

- sulphamidic acid

### 2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

## Section 3: Composition/information on ingredients

### 3.1. Substances

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)		Classification (67/548/EEC)
		Hazard class / Hazard category	Hazard statements	
<b>sulphamidic acid</b>				
Index-No. : 016-026-00-0	>= 99	Eye Irrit.2	H319	Irritant; Xi; R36/38 R52-R53
CAS-No. : 5329-14-6		Skin Irrit.2	H315	
EC-No. : 226-218-8		Aquatic Chronic3	H412	
Registration : 01-2119488633-28-xxxx				

For the full text of the R-phrases mentioned in this Section, see Section 16.

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

## Section 4: First aid measures

### 4.1. Description of first aid measures

General advice : Remove from exposure, lie down. Remove to fresh air. Take off contaminated clothing and shoes immediately. Consult a physician.

If inhaled : Remove to fresh air. Give oxygen. Consult a physician.

In case of skin contact : Wash off immediately with soap and plenty of water. Obtain medical attention.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 5 minutes. Consult a physician.

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If swallowed : Clean mouth with water and drink afterwards plenty of water. Call a physician immediately. Do not induce vomiting without medical advice.

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

Symptoms : See Section 11 for more detailed information on health effects and symptoms.

Effects : See Section 11 for more detailed information on health effects and symptoms.

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

Treatment : Treat symptomatically.  
No further information available.

## Section 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. The product itself does not burn.

Unsuitable extinguishing media : No information available.

### 5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting : In case of fire hazardous decomposition products may be produced such as: Sulphur oxides, nitrogen oxides (NOx), Ammonia

### 5.3. Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit)

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment. Keep people away from and upwind of spill/leak. Avoid dust formation. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection see section 8.

### 6.2. Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.

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### 6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up : Use mechanical handling equipment. Dispose of in accordance with local regulations.

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

### 6.4. Reference to other sections

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

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

Advice on safe handling : Keep container tightly closed. Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity. Remove all sources of ignition. Do not smoke.

Hygiene measures : Take off all contaminated clothing immediately. Do not breathe dust or spray mist. Avoid contact with the skin and the eyes. Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday.

### 7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion : Gives off hydrogen by reaction with metals. Risk of explosion.

Further information on storage conditions : Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep away from sources of ignition - No smoking.

German storage class : 8B: Non-combustible substances, corrosive

### 7.3. Specific end use(s)

Specific use(s) : No information available.

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Other Occupational Exposure Limit Values

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(Additional) : Contains no substances with occupational exposure limit values.  
Information : Contains no substances with occupational exposure limit values.

### 8.2. Exposure controls

#### Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

#### Personal protective equipment

##### *Respiratory protection*

Advice : Dust-mask

##### *Hand protection*

Advice : Wear suitable gloves.  
The following information applies to aqueous, saturated solutions.  
Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).  
Protective gloves should be replaced at first signs of wear.

Material : natural rubber  
Break through time : > 8 h  
Glove thickness : 0.5 mm

Material : polychloroprene  
Break through time : > 8 h  
Glove thickness : 0.5 mm

##### *Eye protection*

Advice : Tightly fitting safety goggles

##### *Skin and body protection*

Advice : Use protective skin cream before handling the product.  
Wear suitable protective clothing.

#### Environmental exposure controls

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

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Colour	: white
Odour	: odourless
Odour Threshold	: no data available
pH	: ca. 1.2 (10 g/l; 20 °C)
Melting point/range	: ca. 190 °C
Boiling point/boiling range	: > 200 °C (1013 hPa)
Flash point	: not applicable
Evaporation rate	: no data available
Flammability (solid, gas)	: does not ignite
Upper explosion limit	: not determined
Lower explosion limit	: not determined
Vapour pressure	: not determined
Relative vapor density	: no data available
Density	: 2.1 g/cm <sup>3</sup> (20 °C)
Water solubility	: 213 g/l (20 °C)
Partition coefficient: n-octanol/water	: log Kow 0.1
Auto-ignition temperature	: not applicable
Thermal decomposition	: 209 °C
Viscosity, dynamic	: not determined
Explosive properties	: EU legislation: not determined
Explosivity	: Product is not explosive.
Oxidizing properties	: no data available

### 9.2. Other information

Bulk density	: 1,000 - 1,300 kg/m <sup>3</sup> (20 °C)
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## Section 10: Stability and reactivity

### 10.1. Reactivity

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Advice : Stable under recommended storage conditions.

**10.2. Chemical stability**

Advice : Stable under normal conditions.

**10.3. Possibility of hazardous reactions**

Hazardous reactions : Incompatible with oxidizing agents. Hydrogen, by reaction with metals

**10.4. Conditions to avoid**

Thermal decomposition : 209 °C

**10.5. Incompatible materials**

Materials to avoid : No information available.

**10.6. Hazardous decomposition products**

Hazardous decomposition products : nitrous gases, Ammonia, Sulphur oxides

**Section 11: Toxicological information**

**11.1. Information on toxicological effects**

**Acute toxicity**

**Oral**

Please find this information in the listing of the component/components below in the MSDS.

**Inhalation**

Please find this information in the listing of the component/components below in the MSDS.

**Dermal**

Please find this information in the listing of the component/components below in the MSDS.

**Irritation**

**Skin**

Result : Please find this information in the listing of the component/components below in the MSDS.



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### Eyes

Result : Please find this information in the listing of the component/components below in the MSDS.

### Sensitisation

Result : Please find this information in the listing of the component/components below in the MSDS.

### CMR effects

#### CMR Properties

Carcinogenicity : Please find this information in the listing of the component/components below in the MSDS.

Mutagenicity : Please find this information in the listing of the component/components below in the MSDS.

Teratogenicity : Please find this information in the listing of the component/components below in the MSDS.

Reproductive toxicity : Please find this information in the listing of the component/components below in the MSDS.

### Specific Target Organ Toxicity

#### Single exposure

remark : Please find this information in the listing of the component/components below in the MSDS.

#### Repeated exposure

remark : Please find this information in the listing of the component/components below in the MSDS.

### Other toxic properties

#### Aspiration hazard

Please find this information in the listing of the component/components below in the MSDS.

### Further information

Other relevant toxicity information : All numerical values for acute toxicity are calculated on the pure substances.

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<b>Component:</b>	<b>sulphamidic acid</b>	<b>CAS-No.</b> <b>5329-14-6</b>
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### Acute toxicity

#### Oral

LD50 : 3160 mg/kg (rat)

### Irritation

#### Skin

Result : Irritating to skin. (rabbit) (OECD Test Guideline 404)

#### Eyes

Result : Severe eye irritation (rabbit) (OECD Test Guideline 405)  
Risk of serious damage to eyes.

### Sensitisation

Result : Did not cause sensitization on laboratory animals.

## Section 12: Ecological information

### 12.1. Toxicity

<b>Component:</b>	<b>sulphamidic acid</b>	<b>CAS-No.</b> <b>5329-14-6</b>
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### Acute toxicity

#### Fish

LC50 : 70.3 mg/l (Pimephales promelas; 96 h)

### Toxicity to daphnia and other aquatic invertebrates

no data available

### 12.2. Persistence and degradability

<b>Component:</b>	<b>sulphamidic acid</b>	<b>CAS-No.</b> <b>5329-14-6</b>
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### Persistence and degradability

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### Persistence

Result : no data available

### Biodegradability

Result : The methods for determining biodegradability are not applicable to inorganic substances.

### 12.3. Bioaccumulative potential

<b>Component:</b>	<b>sulphamidic acid</b>	<b>CAS-No.</b>
		<b>5329-14-6</b>

### Bioaccumulation

Result : Bioaccumulation is not expected.

### 12.4. Mobility in soil

<b>Component:</b>	<b>sulphamidic acid</b>	<b>CAS-No.</b>
		<b>5329-14-6</b>

### Mobility

: no data available

### 12.5. Results of PBT and vPvB assessment

### 12.6. Other adverse effects

#### Additional ecological information

Result : All numerical values for ecotoxicity effects are calculated on the pure substances.  
Does not cause biological oxygen deficit.  
Use neutralizing agent.  
Do not flush into surface water or sanitary sewer system.  
Harmful to aquatic life with long lasting effects.

## 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.

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- Contaminated packaging : Dispose of as unused product. Dispose of in accordance with local regulations.
- 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

2967

#### 14.2. UN proper shipping name

ADR : SULPHAMIC ACID  
 RID : SULPHAMIC ACID  
 IMDG : SULPHAMIC ACID

#### 14.3. Transport hazard class(es)

ADR-Class : 8  
 (Labels; Classification Code; Hazard identification No; Tunnel restriction code) 8; C2; 80; (E)  
 RID-Class : 8  
 (Labels; Classification Code; Hazard identification No) 8; C2; 80  
 IMDG-Class : 8  
 (Labels; EmS) 8; F-A, S-B

#### 14.4. Packaging group

ADR : III  
 RID : III  
 IMDG : III

#### 14.5. Environmental hazards

Labeling according to 5.2.1.8 ADR : no  
 Labeling according to 5.2.1.8 RID : no  
 Labeling according to 5.2.1.6.3 IMDG : no  
 Classification as environmentally hazardous according to 2.9.3 IMDG : no  
 Classified as "P" according to 2.10 IMDG : no

#### 14.6. Special precautions for user

Not applicable.

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

IMDG : Not applicable.

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### Section 15: Regulatory information

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

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##### Notification status

##### sulphamidic acid:

Regulatory List	Notification	Notification number
AICS	YES	
DSL	YES	
INV (CN)	YES	
ENCS (JP)	YES	(1)-402
ISHL (JP)	YES	(1)-402
TSCA	YES	
EINECS	YES	226-218-8
KECI (KR)	YES	KE-32336
PICCS (PH)	YES	

#### 15.2. Chemical Safety Assessment

no data available

### Section 16: Other information

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

R36/38	Irritating to eyes and skin.
R52	Harmful to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.

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

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

#### Further information

Other information : The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text

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|| Indicates updated section.

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No.	Short title	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Production of resins	3	8	32	4, 5, 8a, 8b, 15	1, 2, 6d	NA	ES11051
2	Use as plasticizer	22	NA	32	2, 8a, 8b, 10, 11, 16, 17, 20	8a, 8d, 9a, 9b	NA	ES11055
3	Formulation of pigments	3	NA	34	5	2, 4	NA	ES11053
4	Use as additive	3	NA	1	5, 8a, 8b	2, 6d	NA	ES11060
5	Formulation of cleaning agents	3	10	3, 8, 14, 15, 20, 23, 26, 31, 35, 38	3, 4, 5, 7, 8a, 8b, 9, 13, 15	2	NA	ES10914
6	Use in Cleaning Agents	22	2b	3, 8, 13, 15, 31, 35	1, 2, 4, 5, 8a, 8b, 9, 10, 11, 13, 16, 17, 19, 20	8a, 8b, 8d, 9a, 9b	NA	ES11041
7	Use in Cleaning Agents	3	5, 6b, 8, 15	8, 14, 20, 23, 26, 35, 38	2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 15, 16, 19, 25	4, 6b	NA	ES11043
8	Use in Cleaning Agents	21	20, 23	8, 35	NA	8a, 8b	NA	ES11045
9	Use in chemical synthesis	3	4	19	3	1	NA	ES11057
10	Use in food products	3	NA	35	1, 4, 7, 8a, 8b, 11, 13	4	NA	ES11049

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**1. Short title of Exposure Scenario 1: Production of resins**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU8: Manufacture of bulk, large scale chemicals (including petroleum products)
Chemical product category	PC32: Polymer preparations and compounds
Process categories	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 PROC15: Use as laboratory reagent
Environmental Release Categories	ERC1: Manufacture of substances ERC2: Formulation of preparations ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

**2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC2, ERC6d**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into surface water or into drains., In general discharges should be carried out such that pH changes in receiving surface waters are minimised.
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC4, PROC5, PROC8a, PROC8b, PROC15**

Product characteristics	Physical Form (at time of use)	solid, or, liquid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	780 ton(s)/year
Frequency and duration of use	Exposure duration per day	< 8 h



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Other operational conditions affecting workers exposure	Room size	>= 20 m3
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.	
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear protective gloves. Use suitable eye protection. If necessary: Wear suitable protective clothing. Do not breathe gas/vapour/aerosol. Wear respiratory protection	

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

**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.

**Environment**

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

**Health**

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.

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**1. Short title of Exposure Scenario 2: Use as plasticizer**

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Chemical product category	PC32: Polymer preparations and compounds
Process categories	<p>PROC2: Use in closed, continuous process with occasional controlled exposure</p> <p>PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities</p> <p>PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities</p> <p>PROC10: Roller application or brushing</p> <p>PROC11: Non industrial spraying</p> <p>PROC16: Using material as fuel sources, limited exposure to unburned product to be expected</p> <p>PROC17: Lubrication at high energy conditions and in partly open process</p> <p>PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems</p>
Environmental Release Categories	<p>ERC8a: Wide dispersive indoor use of processing aids in open systems</p> <p>ERC8d: Wide dispersive outdoor use of processing aids in open systems</p> <p>ERC9a: Wide dispersive indoor use of substances in closed systems</p> <p>ERC9b: Wide dispersive outdoor use of substances in closed systems</p>

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

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Use a process that does not generate atmospheric emission
	Water	Do not empty into drains., Do not release wastewater directly into environment.
	Soil	Recovery of sludge for agriculture or horticulture is forbidden
Conditions and measures related to external treatment of waste for disposal	Waste treatment	Waste shall be recovered or recycled if possible, External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC2, PROC8a, PROC8b, PROC10, PROC11, PROC16, PROC17, PROC20**

Product characteristics	Physical Form (at time of use)	liquid, or, solid
	Process Temperature	< 60 °C
Amount used	No information available.	
Other operational conditions affecting workers exposure	Room size	>= 20 m3

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Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance
Conditions and measures related to personal protection, hygiene and health evaluation	Wear protective gloves. Use suitable eye protection. If necessary: Wear suitable protective clothing. Do not breathe gas/vapour/aerosol. Wear respiratory protection

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

**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.

**Environment**

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

**Health**

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.

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**1. Short title of Exposure Scenario 3: Formulation of pigments**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category	PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids
Process categories	PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
Environmental Release Categories	ERC2: Formulation of preparations ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

**2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC4**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into surface water or into drains., In general discharges should be carried out such that pH changes in receiving surface waters are minimised.
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC5**

Product characteristics	Physical Form (at time of use)	liquid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	60 ton(s)/year
Frequency and duration of use	Exposure duration per day	> 4 h
Other operational conditions affecting workers exposure	Room size	>= 20 m3
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.	
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	

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

Wear protective gloves.  
Use suitable eye protection.  
If necessary:  
Wear suitable protective clothing.  
Do not breathe gas/vapour/aerosol.  
Wear respiratory protection

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

**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.

Environment

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Health

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.

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**1. Short title of Exposure Scenario 4: Use as additive**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category	PC1: Adhesives, sealants
Process categories	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	ERC2: Formulation of preparations ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

**2.1 Contributing scenario controlling environmental exposure for: ERC2, ERC6d**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into surface water or into drains., In general discharges should be carried out such that pH changes in receiving surface waters are minimised.
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC5, PROC8a, PROC8b**

Product characteristics	Physical Form (at time of use)	liquid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	ton(s)/year
Frequency and duration of use	Exposure duration per day	> 4 h
Other operational conditions affecting workers exposure	Room size	>= 20 m3
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.	

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Organisational measures to prevent /limit releases, dispersion and exposure

Understand dangerous properties of substance  
Ensure control measures are regularly inspected and maintained.  
Only properly trained and authorised personal shall handle the substance

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

Wear protective gloves.  
Use suitable eye protection.  
If necessary:  
Wear suitable protective clothing.  
Do not breathe gas/vapour/aerosol.  
Wear respiratory protection

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

**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.

Environment

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Health

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.

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**1. Short title of Exposure Scenario 5: Formulation of cleaning agents**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
Chemical product category	PC3: Air care products PC8: Biocidal products PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents PC23: Leather tanning, dye, finishing, impregnation and care products PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids PC31: Polishes and wax blends PC35: Washing and cleaning products (including solvent based products) PC38: Welding and soldering products (with flux coatings or flux cores), flux products
Process categories	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) PROC13: Treatment of articles by dipping and pouring PROC15: Use as laboratory reagent
Environmental Release Categories	ERC2: Formulation of preparations

**2.1 Contributing scenario controlling environmental exposure for: ERC2**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into surface water or into drains., In general discharges should be carried out such that pH changes in receiving surface waters are minimised.
	Conditions and measures related to sewage treatment plant	Municipal sewage treatment plant

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	Treatment Plant	
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC13, 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, or, solid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	1000 ton(s)/year
	The used parameters represent a worst case scenario	
Frequency and duration of use	Exposure duration per day	> 4 h
Other operational conditions affecting workers exposure	Room size	>= 20 m3
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur.	
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear protective gloves. Use suitable eye protection. If necessary: Wear suitable protective clothing. Do not breathe gas/vapour/aerosol. Wear respiratory protection	

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

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

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

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

**Environment**

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

**Health**

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

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**1. Short title of Exposure Scenario 6: Use in Cleaning Agents**

Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Sectors of end-use	SU2b: Offshore industries
Chemical product category	PC3: Air care products PC8: Biocidal products PC13: Fuels PC15: Non-metal-surface treatment products PC31: Polishes and wax blends PC35: Washing and cleaning products (including solvent based products)
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 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 PROC16: Using material as fuel sources, limited exposure to unburned product to be expected PROC17: Lubrication at high energy conditions and in partly open process PROC19: Hand-mixing with intimate contact and only PPE available PROC20: Heat and pressure transfer fluids in dispersive, professional use but closed systems
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC9a: Wide dispersive indoor use of substances in closed systems ERC9b: Wide dispersive outdoor use of substances in closed systems

**2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8d, ERC9a, ERC9b**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to	Water	Do not empty into drains., Do not release wastewater directly into environment.

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prevent/limit release from the site

Conditions and measures related to external treatment of waste for disposal	Waste treatment	Waste shall be recovered or recycled if possible, External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC16, PROC17, PROC19, PROC20**

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 3% - 15%
	Physical Form (at time of use)	liquid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	7 - 1000 ton(s)/year
Frequency and duration of use	Exposure duration per day	15 - 60 min
Other operational conditions affecting workers exposure	Room size	>= 20 m3
	Technical conditions and measures to control dispersion from source towards the worker Clean up contamination/spills as soon as they occur. Avoid splashing.	
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear protective gloves. Use suitable eye protection. If necessary: Wear suitable protective clothing. Do not breathe gas/vapour/aerosol. Wear respiratory protection	

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

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

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

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

Environment

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Health

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.

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**1. Short title of Exposure Scenario 7: Use in Cleaning Agents**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU5: Manufacture of textiles, leather, fur SU6b: Manufacture of pulp, paper and paper products SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU15: Manufacture of fabricated metal products, except machinery and equipment
Chemical product category	PC8: Biocidal products PC14: Metal surface treatment products, including galvanic and electroplating products PC20: Products such as ph-regulators, flocculants, precipitants, neutralization agents PC23: Leather tanning, dye, finishing, impregnation and care products PC26: Paper and board dye, finishing and impregnation products: including bleaches and other processing aids PC35: Washing and cleaning products (including solvent based products) PC38: Welding and soldering products (with flux coatings or flux cores), flux products
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises 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 PROC16: Using material as fuel sources, limited exposure to unburned product to be expected PROC19: Hand-mixing with intimate contact and only PPE available PROC25: Other hot work operations with metals
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC6b: Industrial use of reactive processing aids

**2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into

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measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site		surface water or into drains., In general discharges should be carried out such that pH changes in receiving surface waters are minimised.
	Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC2, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC15, PROC16, PROC19, PROC25**

Product characteristics	Concentration of the Substance in Mixture/Article	Concentration of substance in product : 3% - 15%
	Physical Form (at time of use)	liquid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	100 - 750 ton(s)/year
Frequency and duration of use	Exposure duration per day	15 - 75 min
Other operational conditions affecting workers exposure	Room size	>= 20 m3
	Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear protective gloves. Use suitable eye protection. If necessary: Wear suitable protective clothing. Do not breathe gas/vapour/aerosol. Wear respiratory protection	

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

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**Workers**

Used ECETOC TRA model.

**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.

Environment

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Health

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.



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**1. Short title of Exposure Scenario 8: Use in Cleaning Agents**

Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Sectors of end-use	SU20: Health services SU23: Electricity, steam, gas water supply and sewage treatment
Chemical product category	PC8: Biocidal products PC35: Washing and cleaning products (including solvent based products)
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

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

Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling consumer exposure for: PC8, PC35**

Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 8%
	Physical Form (at time of use)	liquid
Amount used	Amount used per year	100 - 1000 tons/year
Frequency and duration of use	Frequency of use	1 events/week
Human factors not influenced by risk management	Breathing rate	1,37 m³/h
	Exposed skin areas	Covers skin contact area: 1000 cm²
Other given operational conditions affecting consumers exposure	Room size	20 m3
	Assumes activities are at ambient temperature., Covers use under typical household ventilation.	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Consumer Measures	Ensure that direct skin contact is avoided. Avoid using without gloves.

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Consumers**

Used ECETOC TRA model.

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

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

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

**Environment**

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

**Health**

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

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**1. Short title of Exposure Scenario 9: Use in chemical synthesis**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU4: Manufacture of food products
Chemical product category	PC19: Intermediate
Process categories	PROC3: Use in closed batch process (synthesis or formulation)
Environmental Release Categories	ERC1: Manufacture of substances
Activity	Covers a technical use, not intended to be used in food, feedingstuffs or human and veterianian medicinal products, as specified in Art.2 (5)(6) of the REACH regulation

**2.1 Contributing scenario controlling environmental exposure for: ERC1**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Air	Use a process that does not generate atmospheric emission
	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into surface water or into drains.
	Soil	Recovery of sludge for agriculture or horticulture is forbidden
Conditions and measures related to external treatment of waste for disposal	Waste treatment	Waste shall be recovered or recycled if possible, External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC3**

Product characteristics	Physical Form (at time of use)	solid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	1000 ton(s)/year
Other operational conditions affecting workers exposure	Room size	>= 20 m3
	Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	
Conditions and measures related	Wear protective gloves.	

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to personal protection, hygiene and health evaluation

Use suitable eye protection.  
If necessary:  
Wear suitable protective clothing.  
Do not breathe gas/vapour/aerosol.  
Wear respiratory protection

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

**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.

Environment

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

Health

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.

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**1. Short title of Exposure Scenario 10: Use in food products**

Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Chemical product category	PC35: Washing and cleaning products (including solvent based products)
Process categories	PROC1: Use in closed process, no likelihood of exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC11: Non industrial spraying PROC13: Treatment of articles by dipping and pouring
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
Activity	Covers a technical use, not intended to be used in food, feedingstuffs or human and veterinarian medicinal products, as specified in Art.2 (5)(6) of the REACH regulation

**2.1 Contributing scenario controlling environmental exposure for: ERC4**

Technical conditions and measures at process level (source) to prevent release Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Organizational measures to prevent/limit release from the site	Water	Do not empty into drains., Do not release wastewater directly into environment., Do not allow to enter undiluted resp. in large quantities into surface water or into drains., In general discharges should be carried out such that pH changes in receiving surface waters are minimised.
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
	Disposal methods	Packagings that cannot be cleaned are to be disposed of in the same manner as the product

**2.2 Contributing scenario controlling worker exposure for: PROC1, PROC4, PROC7, PROC8a, PROC8b, PROC11, PROC13**

Product characteristics	Physical Form (at time of use)	liquid
	Process Temperature	< 60 °C
Amount used	Amount used at workplace	305 ton(s)/year
Frequency and duration of use	Exposure duration per	< 8 h

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	day	
Other operational conditions affecting workers exposure	Room size	>= 20 m3
Technical conditions and measures to control dispersion from source towards the worker	Clean up contamination/spills as soon as they occur. Avoid splashing.	
Organisational measures to prevent /limit releases, dispersion and exposure	Understand dangerous properties of substance Ensure control measures are regularly inspected and maintained. Only properly trained and authorised personal shall handle the substance	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear protective gloves. Use suitable eye protection. If necessary: Wear suitable protective clothing. Do not breathe gas/vapour/aerosol. Wear respiratory protection	

**3. Exposure estimation and reference to its source**

**Environment**

No exposure assessment presented for the environment.

**Workers**

Used ECETOC TRA model.

**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.

**Environment**

Estimated exposures are not expected to exceed PNEC when the identified Risk Management Measures / Operational Conditions are adopted, as indicated in Section 2

**Health**

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

**Additional good practice advice beyond the REACH Chemical Safety Assessment**

Local exhaust ventilation is not required but good practice.