

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Revision Date 31.07.2018

Version 4.8

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**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No.	100014
Product name	Acetone for analysis EMSURE® ACS,ISO,Reag. Ph Eur
REACH Registration Number	01-2119471330-49-XXXX
CAS-No.	67-64-1

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

Identified uses	Reagent for analysis, Chemical production In compliance with the conditions described in the annex to this safety data sheet.
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**1.3 Details of the supplier of the safety data sheet**

Responsible Department	LS-QHC * e-mail: prodsafe@merckgroup.com
Regional representation	Merck Chemicals Ltd * Boulevard Industrial Park * Padge Road * Beeston * Nottingham * NG9 2JR * Tel. 01159 430840 * information@merckchem.co.uk.

<b>1.4 Emergency telephone number</b>	+49 (0) 6151 722440
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**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture**

Classification (REGULATION (EC) No 1272/2008)

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Flammable liquid, Category 2, H225

Eye irritation, Category 2, H319

Specific target organ toxicity - single exposure, Category 3, Central nervous system, H336

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

## 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

*Precautionary statements*

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240 Ground/bond container and receiving equipment.

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.

Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

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## Reduced labelling (≤125 ml)

*Hazard pictograms*



*Signal word*

Danger

*Precautionary statements*

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

Formula	CH <sub>3</sub> COCH <sub>3</sub>	C <sub>3</sub> H <sub>6</sub> O (Hill)
Index-No.	606-001-00-8	
EC-No.	200-662-2	
Molar mass	58.08 g/mol	

### Hazardous components (REGULATION (EC) No 1272/2008)

*Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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acetone (<= 100 % )

*Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.*

67-64-1	01-2119471330-49-XXXX	Flammable liquid, Category 2, H225 Eye irritation, Category 2, H319 Specific target organ toxicity - single exposure, Category 3, H336
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For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 3.2 Mixture

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

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

Risk of corneal clouding.

Drying-out effect resulting in rough and chapped skin.

irritant effects, Drowsiness, Dizziness, narcosis, Nausea, Vomiting, Stomach/intestinal disorders, Headache, somnolence, Salivation, Coma

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

No information available.

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## SECTION 5. Firefighting measures

### 5.1 Extinguishing media

*Suitable extinguishing media*

Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible.

Pay attention to flashback.

Forms explosive mixtures with air at ambient temperatures.

Vapours are heavier than air and may spread along floors.

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Development of hazardous combustion gases or vapours possible in the event of fire.

## 5.3 Advice for firefighters

*Special protective equipment for firefighters*

In the event of fire, wear self-contained breathing apparatus.

*Further information*

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

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

Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

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

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

*Advice on safe handling*

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

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### *Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

### *Hygiene measures*

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

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

### *Storage conditions*

Protected from light.

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Recommended storage temperature see product label.

## **7.3 Specific end use(s)**

See exposure scenario in the Annex to this MSDS.

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## **SECTION 8. Exposure controls/personal protection**

### **8.1 Control parameters**

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## Components with workplace control parameters

### Components

Basis	Value	Threshold limits	Remarks
<i>acetone (67-64-1)</i>			
EU ELV	Time Weighted Average (TWA):	500 ppm 1,210 mg/m <sup>3</sup>	
EH40 WEL	Short Term Exposure Limit (STEL):	1,500 ppm 3,620 mg/m <sup>3</sup>	
	Time Weighted Average (TWA):	500 ppm 1,210 mg/m <sup>3</sup>	

## Derived No Effect Level (DNEL)

Worker DNEL, acute	Local effects	inhalation	2420 mg/m <sup>3</sup>
Worker DNEL, longterm	Systemic effects	dermal	186 mg/kg Body weight
Worker DNEL, longterm	Systemic effects	inhalation	1210 mg/m <sup>3</sup>
Consumer DNEL, longterm	Systemic effects	dermal	62 mg/kg Body weight
Consumer DNEL, longterm	Systemic effects	inhalation	200 mg/m <sup>3</sup>
Consumer DNEL, longterm	Systemic effects	oral	62 mg/kg Body weight

## Recommended monitoring procedures

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

## Predicted No Effect Concentration (PNEC)

PNEC Fresh water	10.6 mg/l
PNEC Marine water	1.06 mg/l
PNEC Fresh water sediment	30.4 mg/kg
PNEC Marine sediment	3.04 mg/kg

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PNEC Soil 29.5 mg/kg

PNEC Sewage treatment plant 100 mg/l

## 8.2 Exposure controls

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

full contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	480 min

splash contact:

Glove material:	natural latex
Glove thickness:	0.6 mm
Break through time:	10 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 706 Lapren® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.



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This recommendation applies only to the product stated in the safety data sheet(>,<) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

### *Other protective equipment*

Flame retardant antistatic protective clothing.

### *Respiratory protection*

required when vapours/aerosols are generated.

Recommended Filter type: Filter AX (EN 371)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### **Environmental exposure controls**

Do not let product enter drains.

Risk of explosion.

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## **SECTION 9. Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

Form	liquid
Colour	colourless
Odour	like fruit
Odour Threshold	0.1 - 662.5 ppm
pH	5 - 6 at 395 g/l 20 °C
Melting point	-95.4 °C

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Boiling point/boiling range	56.2 °C at 1,013 hPa
Flash point	< -20 °C Method: DIN 51755 Part 1
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2.6 %(V)
Upper explosion limit	12.8 %(V)
Vapour pressure	233 hPa at 20 °C
Relative vapour density	2.01
Density	0.79 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	at 20 °C soluble
Partition coefficient: n-octanol/water	log Pow: -0.24 (experimental) Bioaccumulation is not expected. (Lit.)
Auto-ignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.

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Viscosity, dynamic	0.32 mPa.s at 20 °C
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Explosive properties	Not classified as explosive.
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Oxidizing properties	none
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## 9.2 Other data

Ignition temperature	465 °C DIN 51794
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Conductivity	0.01 µS/cm at 20 °C
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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

Vapours may form explosive mixture with air.

### 10.2 Chemical stability

Sensitivity to light

Sensitive to air.

### 10.3 Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapours with:

chromosulfuric acid, chromyl chloride, ethanolamine, Fluorine, Strong oxidizing agents, strong reducing agents, Nitric acid, chromium(VI) oxide

Risk of explosion with:

nonmetallic oxyhalides, halogen-halogen compounds, Chloroform, nitrating acid, nitrosyl compounds, hydrogen peroxide, halogen oxides, organic nitro compounds, peroxi compounds

Exothermic reaction with:

Bromine, Alkali metals, alkali hydroxides, Halogenated hydrocarbon, Sulphur dichloride, phosphorous oxichloride

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## 10.4 Conditions to avoid

Warming.

## 10.5 Incompatible materials

rubber, various plastics

## 10.6 Hazardous decomposition products

no information available

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### *Acute oral toxicity*

LD50 Rat: 5,800 mg/kg

(ECHA)

Symptoms: Stomach/intestinal disorders, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

#### *Acute inhalation toxicity*

LC50 Rat: 76 mg/l; 4 h ; vapour

(Lit.)

Symptoms: mucosal irritations

#### *Acute dermal toxicity*

LD50 Rabbit: 20,000 mg/kg

(IUCLID)

#### *Skin irritation*

Rabbit

Result: No irritation

(External MSDS)

Repeated exposure may cause skin dryness or cracking.

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## *Eye irritation*

Rabbit

Result: Eye irritation

(External MSDS)

Causes serious eye irritation.

Risk of corneal clouding.

## *Sensitisation*

Maximisation Test Guinea pig

Result: negative

(ECHA)

## *Germ cell mutagenicity*

### *Genotoxicity in vivo*

Micronucleus test

Result: negative

(National Toxicology Program)

### *Genotoxicity in vitro*

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

## *Carcinogenicity*

Did not show carcinogenic effects in animal experiments. (IUCRID)

## *Reproductive toxicity*

This information is not available.

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## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

May cause drowsiness or dizziness.

Target Organs: Central nervous system

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

After absorption:

Headache, Salivation, Nausea, Vomiting, Dizziness, narcosis, Coma

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

#### *Toxicity to fish*

LC50 *Oncorhynchus mykiss* (rainbow trout): 5,540 mg/l; 96 h

(Lit.)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 6,100 mg/l; 48 h

(Lit.)

EC5 *E.sulcatum*: 28 mg/l; 72 h

(maximum permissible toxic concentration) (Lit.)

#### *Toxicity to algae*

NOEC *M.aeruginosa*: 530 mg/l; 8 d

Analytical monitoring: no

DIN 38412

(maximum permissible toxic concentration) (IUCLID)

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## *Toxicity to bacteria*

EC50 activated sludge: 59 - 67.4 mg/l; 30 min

(Lit.)

EC5 Pseudomonas putida: 1,700 mg/l; 16 h

(maximum permissible toxic concentration) (IUCLID)

## **12.2 Persistence and degradability**

### *Biodegradability*

91 %; 28 d

(IUCLID)

Readily biodegradable

### *Biochemical Oxygen Demand (BOD)*

1,850 mg/g (5 d)

(IUCLID)

### *Chemical Oxygen Demand (COD)*

2,070 mg/g

(IUCLID)

### *Theoretical oxygen demand (ThOD)*

2,200 mg/g

(Lit.)

## **12.3 Bioaccumulative potential**

### *Partition coefficient: n-octanol/water*

log Pow: -0.24

(experimental)

Bioaccumulation is not expected. (Lit.)

## **12.4 Mobility in soil**

No information available.

## **12.5 Results of PBT and vPvB assessment**

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

## **12.6 Other adverse effects**

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Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

### *Waste treatment methods*

Notice Directive on waste 2008/98/EC.

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 UN number	UN 1090
14.2 Proper shipping name	ACETONE
14.3 Class	3
14.4 Packing group	II
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	D/E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)



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14.1 UN number UN 1090  
14.2 Proper shipping name ACETONE  
14.3 Class 3  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user no

#### Sea transport (IMDG)

14.1 UN number UN 1090  
14.2 Proper shipping name ACETONE  
14.3 Class 3  
14.4 Packing group II  
14.5 Environmentally hazardous --  
14.6 Special precautions for user yes

EmS F-E S-D

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

Not relevant

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## SECTION 15. Regulatory information

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

#### *EU regulations*

Major Accident Hazard SEVESO III  
Legislation FLAMMABLE LIQUIDS  
P5c  
Quantity 1: 5,000 t  
Quantity 2: 50,000 t

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work.

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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1\%$  (w/w).

#### *National legislation*

Storage class 3

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## 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.

### Training advice

Provide adequate information, instruction and training for operators.

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## Labelling

### *Hazard pictograms*



### *Signal word*

Danger

### *Hazard statements*

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

EUH066 Repeated exposure may cause skin dryness or cracking.

### *Precautionary statements*

#### Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

#### 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.

#### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

## Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*

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## EXPOSURE SCENARIO 1 (Industrial use)

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### 1. Industrial use Reagent for analysis, Chemical production)

#### Sectors of end-use

- SU 3* Industrial uses: Uses of substances as such or in preparations at industrial sites
- SU 9* Manufacture of fine chemicals
- SU 10* Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)

#### Chemical product category

- PC19* Intermediate
- PC21* Laboratory chemicals

#### 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
- PROC14* Production of preparations or articles by tableting, 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)

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*ERC6b* Industrial use of reactive processing aids

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## 2. Contributing scenarios: Operational conditions and risk management measures

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

#### Amount used

Annual amount per site 10550 t

Daily amount per site (Msafe) 29.31 t

#### Environment factors not influenced by risk management

Flow rate 18,000 m<sup>3</sup>/d

Dilution Factor (River) 10

#### Other given operational conditions affecting environmental exposure

Number of emission days per year 360

Emission or Release Factor: Air 5 %

Emission or Release Factor: Water 6 %

Emission or Release Factor: Soil 0.01 %

#### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant Default industrial size

Flow rate of sewage treatment 2,000 m<sup>3</sup>/d

plant effluent

Effectiveness (of a measure) 88 %

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### 2.2 Contributing scenario controlling environmental exposure for: ERC2

#### Amount used

Annual amount per site 31650 t

Daily amount per site (Msafe) 87.92 t

#### Environment factors not influenced by risk management

Flow rate 18,000 m<sup>3</sup>/d

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Dilution Factor (River)	10
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## Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	2.5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	0.01 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2,000 m3/d
Effectiveness (of a measure)	88 %

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## 2.3 Contributing scenario controlling environmental exposure for: ERC4

### Amount used

Annual amount per site	633 t
Daily amount per site (Msafe)	1.76 t

### Environment factors not influenced by risk management

Flow rate	18,000 m3/d
Dilution Factor (River)	10

## Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	100 %
Emission or Release Factor: Water	100 %
Emission or Release Factor: Soil	5 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment	2,000 m3/d

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plant effluent	
Effectiveness (of a measure)	88 %

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## 2.4 Contributing scenario controlling environmental exposure for: ERC6a

### Amount used

Annual amount per site	31650 t
Daily amount per site (Msafe)	87.92 t

### Environment factors not influenced by risk management

Flow rate	18,000 m <sup>3</sup> /d
Dilution Factor (River)	10

### Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	1 %

### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment	2,000 m <sup>3</sup> /d
plant effluent	
Effectiveness (of a measure)	88 %

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## 2.5 Contributing scenario controlling environmental exposure for: ERC6b

### Amount used

Annual amount per site	12660 t
Daily amount per site (Msafe)	35.17 t

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## Environment factors not influenced by risk management

Flow rate 18,000 m<sup>3</sup>/d  
Dilution Factor (River) 10

## Other given operational conditions affecting environmental exposure

Number of emission days per year 360  
Emission or Release Factor: Air 0.1 %  
Emission or Release Factor: Water 5 %  
Emission or Release Factor: Soil 0.02 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant Default industrial size  
Flow rate of sewage treatment 2,000 m<sup>3</sup>/d  
plant effluent  
Effectiveness (of a measure) 88 %

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

### Product characteristics

Concentration of the Substance in Mixture/Article Covers the percentage of the substance in the product up to 100 %.  
Physical Form (at time of use) High volatile liquid

### Frequency and duration of use

Frequency of use 8 hours/day

### Other operational conditions affecting workers exposure

Outdoor / Indoor Indoor with good general ventilation

### Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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



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Use suitable eye protection.

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

Additional good practice advice Wear suitable gloves tested to EN374.

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

#### Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC1	29.31 t/day	Fresh water	1	EUSES
2.2	ERC2	87.92 t/day	Fresh water	1	EUSES
2.3	ERC4	1.76 t/day	Fresh water	1	EUSES
2.4	ERC6a	87.92 t/day	Fresh water	1	EUSES
2.5	ERC6b	35.17 t/day	Fresh water	1	EUSES

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## Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.6	PROC1	longterm, inhalative, systemic	< 0.01	ECETOC TRA 3
		longterm, dermal, systemic	< 0.01	ECETOC TRA 3
		longterm, combined, systemic	< 0.01	
2.6	PROC2	longterm, inhalative, systemic	0.10	ECETOC TRA 3
		longterm, dermal, systemic	0.01	ECETOC TRA 3
		longterm, combined, systemic	0.11	
2.6	PROC3	longterm, inhalative, systemic	0.20	ECETOC TRA 3
		longterm, dermal, systemic	< 0.01	ECETOC TRA 3
		longterm, combined, systemic	0.20	
2.6	PROC4	longterm, inhalative, systemic	0.20	ECETOC TRA 3
		longterm, dermal, systemic	0.04	ECETOC TRA 3
		longterm, combined, systemic	0.24	
2.6	PROC5	longterm, inhalative, systemic	0.50	ECETOC TRA 3
		longterm, dermal, systemic	0.07	ECETOC TRA 3
		longterm, combined, systemic	0.57	
2.6	PROC8a	longterm, inhalative, systemic	0.50	ECETOC TRA 3
		longterm, dermal, systemic	0.07	ECETOC TRA 3
		longterm, combined, systemic	0.57	
2.6	PROC8b	longterm, inhalative, systemic	0.30	ECETOC TRA 3
		longterm, dermal, systemic	0.04	ECETOC TRA 3
		longterm, combined, systemic	0.34	
2.6	PROC9	longterm, inhalative, systemic	0.40	ECETOC TRA 3
		longterm, dermal, systemic	0.04	ECETOC TRA 3
		longterm, combined, systemic	0.44	
2.6	PROC10	longterm, inhalative, systemic	0.50	ECETOC TRA 3
		longterm, dermal, systemic	0.15	ECETOC TRA 3
		longterm, combined, systemic	0.65	
2.6	PROC14	longterm, inhalative, systemic	0.10	ECETOC TRA 3
		longterm, dermal, systemic	< 0.01	ECETOC TRA 3
		longterm, combined, systemic	0.10	
2.6	PROC15	longterm, inhalative, systemic	0.10	ECETOC TRA 3
		longterm, dermal, systemic	< 0.01	ECETOC TRA 3
		longterm, combined, systemic	0.10	

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The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

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

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool SciDeEx® at [www.merckmillipore.com/scideex](http://www.merckmillipore.com/scideex).

For scaling of environmental exposure assessments, please refer to the ECT tool at <http://www.reachcentrum.eu/consortium/phenol-derivatives-reach-consortium-149.html>

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## EXPOSURE SCENARIO 2 (Professional use)

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### 1. Professional use Reagent for analysis, Chemical production)

#### Sectors of end-use

*SU 22* Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Chemical product category

*PC 21* Laboratory chemicals

#### Process categories

*PROC 15* Use as laboratory reagent

#### Environmental Release Categories

*ERC 2* Formulation of preparations

*ERC 6a* Industrial use resulting in manufacture of another substance (use of intermediates)

*ERC 6b* Industrial use of reactive processing aids

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### 2. Contributing scenarios: Operational conditions and risk management measures

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

#### Amount used

Annual amount per site 31650 t

Daily amount per site (Msafe) 87.92 t

#### Environment factors not influenced by risk management

Flow rate 18,000 m<sup>3</sup>/d

Dilution Factor (River) 10

#### Other given operational conditions affecting environmental exposure

Number of emission days per year 360

Emission or Release Factor: Air 2.5 %

Emission or Release Factor: Water 2 %

Emission or Release Factor: Soil 0.01 %

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## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2,000 m3/d
Effectiveness (of a measure)	88 %

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## 2.2 Contributing scenario controlling environmental exposure for: ERC6a

### Amount used

Annual amount per site	31650 t
Daily amount per site (Msafe)	87.92 t

### Environment factors not influenced by risk management

Flow rate	18,000 m3/d
Dilution Factor (River)	10

### Other given operational conditions affecting environmental exposure

Number of emission days per year	360
Emission or Release Factor: Air	5 %
Emission or Release Factor: Water	2 %
Emission or Release Factor: Soil	1 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
Flow rate of sewage treatment plant effluent	2,000 m3/d
Effectiveness (of a measure)	88 %

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## 2.3 Contributing scenario controlling environmental exposure for: ERC6b

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## Amount used

Annual amount per site	12660 t
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Daily amount per site (Msafe)	35.17 t
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## Environment factors not influenced by risk management

Flow rate	18,000 m <sup>3</sup> /d
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Dilution Factor (River)	10
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## Other given operational conditions affecting environmental exposure

Number of emission days per year	360
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Emission or Release Factor: Air	0.1 %
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Emission or Release Factor: Water	5 %
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Emission or Release Factor: Soil	0.02 %
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## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	Default industrial size
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Flow rate of sewage treatment	2,000 m <sup>3</sup> /d
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plant effluent

Effectiveness (of a measure)	88 %
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## 2.4 Contributing scenario controlling worker exposure for: PROC15

### Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 %.
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Physical Form (at time of use)	High volatile liquid
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### Frequency and duration of use

Frequency of use	8 hours/day
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### Other operational conditions affecting workers exposure

Outdoor / Indoor	Indoor with good general ventilation
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## Organisational measures to prevent /limit releases, dispersion and exposure

Covers daily exposures up to 8 hours.

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

Use suitable eye protection.

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

Additional good practice advice Wear suitable gloves tested to EN374.

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## 3. Exposure estimation and reference to its source

### Environment

CS	Use descriptor	Msafe	Compartment	RCR	Exposure Assessment Method
2.1	ERC2	87.92 t/day	Fresh water	1	EUSES
2.2	ERC6a	87.92 t/day	Fresh water	1	EUSES
2.3	ERC6b	35.17 t/day	Fresh water	1	EUSES

### Workers

CS	Use descriptor	Exposure duration, route, effect	RCR	Exposure Assessment Method
2.4	PROC15	longterm, inhalative, systemic	0.10	ECETOC TRA 3
		longterm, dermal, systemic	< 0.01	ECETOC TRA 3
		longterm, combined, systemic	0.10	

The default parameters and -efficiencies of the applied exposure assessment model were used for the calculation (unless stated differently).

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



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