

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 5.6 Revision Date 18.11.2013

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Sodium hydroxide

Product Number : S8045  
Brand : Sigma-Aldrich  
Index-No. : 011-002-00-6  
REACH No. : 01-2119457892-27-XXXX  
CAS-No. : 1310-73-2

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

Identified uses : Laboratory chemicals, Manufacture of substances

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

Company : Sigma-Aldrich Company Ltd.  
The Old Brickyard  
NEW ROAD, GILLINGHAM  
Dorset  
SP8 4XT  
UNITED KINGDOM

Telephone : +44 (0)1747 833000  
Fax : +44 (0)1747 833313  
E-mail address : eurtechserv@sial.com

**1.4 Emergency telephone number**

Emergency Phone # : +44 (0)1747 833100

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Corrosive to metals (Category 1), H290

Skin corrosion (Category 1A), H314

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**

C Corrosive R35

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

**2.2 Label elements****Labelling according Regulation (EC) No 1272/2008**

Pictogram



Signal word : Danger

Hazard statement(s)

H290

H314

May be corrosive to metals.

Causes severe skin burns and eye damage.

Precautionary statement(s)	
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
Supplemental Hazard Statements	none

## 2.3 Other hazards - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms	:	Caustic soda
Formula	:	HNaO
Molecular Weight	:	40.00 g/mol
CAS-No.	:	1310-73-2
EC-No.	:	215-185-5
Index-No.	:	011-002-00-6
Registration number	:	01-2119457892-27-XXXX

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component	Classification	Concentration
<b>Sodium hydroxide</b>		
CAS-No. 1310-73-2	Met. Corr. 1; Skin Corr. 1A; H290, H314	<= 100 %
EC-No. 215-185-5		
Index-No. 011-002-00-6		
Registration number 01-2119457892-27-XXXX		

#### Hazardous ingredients according to Directive 1999/45/EC

Component	Classification	Concentration
<b>Sodium hydroxide</b>		
CAS-No. 1310-73-2	C, R35	<= 100 %
EC-No. 215-185-5		
Index-No. 011-002-00-6		
Registration number 01-2119457892-27-XXXX		

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

no data available

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### **SECTION 5: Firefighting measures**

#### **5.1 Extinguishing media**

##### **Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Sodium oxides

#### **5.3 Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

#### **5.4 Further information**

no data available

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### **SECTION 6: Accidental release measures**

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

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.

#### **6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### **6.4 Reference to other sections**

For disposal see section 13.

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### **SECTION 7: Handling and storage**

#### **7.1 Precautions for safe handling**

Avoid formation of dust and aerosols.  
Provide appropriate exhaust ventilation at places where dust is formed.  
For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

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

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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

#### **8.1 Control parameters**

**Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Sodium hydroxide	1310-73-2	STEL	2 mg/m3	UK. EH40 WEL - Workplace Exposure Limits

#### Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Inhalation	Long-term local effects	1 mg/m3
Consumers	Inhalation	Long-term local effects	1 mg/m3

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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

a) Appearance	Form: pellets Colour: white
b) Odour	odourless
c) Odour Threshold	no data available
d) pH	14 at 50 g/l at 20 °C
e) Melting point/freezing point	Melting point/range: 318 °C
f) Initial boiling point and boiling range	1,390 °C
g) Flash point	not applicable
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	no data available
k) Vapour pressure	< 24.00 hPa at 20 °C 4.00 hPa at 37 °C
l) Vapour density	1.38 - (Air = 1.0)
m) Relative density	2.1300 g/cm <sup>3</sup>
n) Water solubility	ca.1,260 g/l at 20 °C
o) Partition coefficient: n-octanol/water	no data available
p) Auto-ignition temperature	no data available
q) Decomposition temperature	no data available
r) Viscosity	no data available
s) Explosive properties	no data available
t) Oxidizing properties	no data available

**9.2 Other safety information**

Bulk density	ca.1,150 kg/m <sup>3</sup>
Relative vapour density	1.38 - (Air = 1.0)

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

no data available

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

no data available

- 10.4 Conditions to avoid**  
no data available
- 10.5 Incompatible materials**  
Strong oxidizing agents, Strong acids, Organic materials
- 10.6 Hazardous decomposition products**  
Other decomposition products - no data available  
In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

**Acute toxicity**

no data available

**Skin corrosion/irritation**

Skin - rabbit

Result: Causes severe burns. - 24 h

**Serious eye damage/eye irritation**

Eyes - rabbit

Result: Corrosive - 24 h

**Respiratory or skin sensitisation**

Will not occur

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

no data available

**Specific target organ toxicity - single exposure**

no data available

**Specific target organ toxicity - repeated exposure**

no data available

**Aspiration hazard**

no data available

**Additional Information**

RTECS: WB4900000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

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## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish	LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 45.4 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia - 40.38 mg/l - 48 h

### 12.2 Persistence and degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Other adverse effects**

Harmful to aquatic life.

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**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

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

ADR/RID: 1823

IMDG: 1823

IATA: 1823

**14.2 UN proper shipping name**

ADR/RID: SODIUM HYDROXIDE, SOLID

IMDG: SODIUM HYDROXIDE, SOLID

IATA: Sodium hydroxide, solid

**14.3 Transport hazard class(es)**

ADR/RID: 8

IMDG: 8

IATA: 8

**14.4 Packaging group**

ADR/RID: II

IMDG: II

IATA: II

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

no data available

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**SECTION 15: Regulatory information**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

**15.2 Chemical Safety Assessment**

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

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**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

H290

May be corrosive to metals.

H314

Causes severe skin burns and eye damage.

Met. Corr.

Corrosive to metals

Skin Corr.

Skin corrosion

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

C Corrosive  
R35 Causes severe burns.

**Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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## Annex: Exposure scenario

### Identified uses:

#### Use: Used as chemical intermediate

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 3, SU9:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals
<b>PC19:</b> Intermediate
<b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing) <b>PROC15:</b> Use as laboratory reagent
<b>ERC1:</b> Manufacture of substances

#### Use: Formulation of preparations

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 10:</b> Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
<b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC5:</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
<b>ERC2:</b> Formulation of preparations

#### Use: Used as laboratory reagent.

<b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
<b>SU 3, SU 22, SU24:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Professional uses: Public domain (administration, education, entertainment, services, craftsmen), Scientific research and development
<b>PC21:</b> Laboratory chemicals
<b>PROC15:</b> Use as laboratory reagent
<b>ERC4, ERC6a, ERC6b:</b> Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids

#### Use: Industrial use of processing aids in processes and products, not becoming part of articles

<b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
<b>SU 3, SU 22, SU24:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Professional uses: Public domain (administration, education, entertainment, services, craftsmen), Scientific research and development
<b>PC2:</b> Adsorbents <b>PC14:</b> Metal surface treatment products, including galvanic and electroplating products <b>PC15:</b> Non-metal-surface treatment products <b>PC20:</b> Products such as ph-regulators, flocculants, pre-cipitants, neutralization agents <b>PC35:</b> Washing and cleaning products (including solvent based products)
<b>PROC5:</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

<b>PROC10:</b> Roller application or brushing
<b>PROC11:</b> Non industrial spraying
<b>PROC13:</b> Treatment of articles by dipping and pouring
<b>PROC15:</b> Use as laboratory reagent
<b>ERC4:</b> Industrial use of processing aids in processes and products, not becoming part of articles

## 1. Short title of Exposure Scenario: Used as chemical intermediate

Main User Groups	: SU 3
Sectors of end-use	: SU 3, SU9
Chemical product category	: PC19
Process categories	: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15
Environmental Release Categories	: ERC1:

## 2. Exposure scenario

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

#### Product characteristics

Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
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### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15, PC19

#### Product characteristics

Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)	: Solid, low dustiness

#### Frequency and duration of use

Application duration	: > 4 h
Frequency of use	: 220 days/year

#### Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor
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#### Technical conditions and measures

Provide adequate ventilation., Good work practice required.

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

Ensure operatives are trained to minimise exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

## 3. Exposure estimation and reference to its source

### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC1	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.007 mg/m3	0.007
PROC2	ECETOC TRA	Without Local Exhaust	Inhalation	0.007 mg/m3	0.007

		Ventilation			
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.7 mg/m3	0.7
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07

\*Risk characterisation ratio

#### 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 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).

#### 1. Short title of Exposure Scenario: Formulation of preparations

Main User Groups : **SU 3**  
Sectors of end-use : **SU 10**  
Process categories : **PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9**  
Environmental Release Categories : **ERC2:**

#### 2. Exposure scenario

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

###### Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

##### 2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9

###### Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Physical Form (at time of use) : Solid, low dustiness

###### Frequency and duration of use

Application duration : > 4 h  
Frequency of use : 220 days/year

###### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

###### Technical conditions and measures

Provide adequate ventilation., Good work practice required.

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

Ensure operatives are trained to minimise exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

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

#### Environment

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC1	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.007 mg/m3	0.007
PROC2	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.007 mg/m3	0.007
PROC3	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07
PROC4	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.7 mg/m3	0.7
PROC5	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.7 mg/m3	0.7
PROC8b	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07

\*Risk characterisation ratio

### 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 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).

#### 1. Short title of Exposure Scenario: Used as laboratory reagent.

Main User Groups : SU 22  
Sectors of end-use : SU 3, SU 22, SU24  
Chemical product category : PC21  
Process categories : PROC15  
Environmental Release Categories : ERC4, ERC6a, ERC6b:

#### 2. Exposure scenario

##### 2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6a, ERC6b

###### Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

##### 2.2 Contributing scenario controlling worker exposure for: PROC15, PC21

###### Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).  
Physical Form (at time of use) : Solid, low dustiness

**Frequency and duration of use**

Application duration : > 4 h  
Frequency of use : 220 days/year

**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

**Technical conditions and measures**

Provide adequate ventilation., Good work practice required.

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

Ensure operatives are trained to minimise exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

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

**Environment**

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07

\*Risk characterisation ratio

**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 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).

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**1. Short title of Exposure Scenario: Industrial use of processing aids in processes and products, not becoming part of articles**

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Main User Groups : **SU 22**  
Sectors of end-use : **SU 3, SU 22, SU24**  
Chemical product category : **PC2, PC14, PC15, PC20, PC35**  
Process categories : **PROC5, PROC9, PROC10, PROC11, PROC13, PROC15**  
Environmental Release Categories : **ERC4:**

**2. Exposure scenario**

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

**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

**2.2 Contributing scenario controlling worker exposure for: PROC5, PROC9, PROC10, PROC11, PROC13, PROC15, PC2, PC14, PC15, PC20, PC35**

**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).  
Physical Form (at time of use) : Solid, low dustiness

**Frequency and duration of use**

Application duration : > 4 h  
Frequency of use : 220 days/year

**Other operational conditions affecting workers exposure**

Outdoor / Indoor : Indoor

**Technical conditions and measures**

Provide adequate ventilation., Good work practice required.

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

Ensure operatives are trained to minimise exposures.

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

Use suitable eye protection and gloves., For personal protection see section 8.

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

A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC5	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.7 mg/m3	0.7
PROC9	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07
PROC10	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.35 mg/m3	0.35
PROC11	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.7 mg/m3	0.7
PROC13	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.35 mg/m3	0.35
PROC15	ECETOC TRA	Without Local Exhaust Ventilation	Inhalation	0.07 mg/m3	0.07

\*Risk characterisation ratio

**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 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).