

# SAFETY DATA SHEET

according to REACH Regulation (EC) No. 1907/2006, as amended by UK REACH Regulations SI 2019/758



**2-Ethylhexylamine**  
**10060**

**Version / Revision** 8  
**Supersedes Version** 7.00\*\*\*

**Revision Date** 26-Oct-2022  
**Issuing date** 26-Oct-2022

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

### 1.1. Product identifier

**Identification of the substance/preparation**

**2-Ethylhexylamine**

**CAS-No** 104-75-6  
**EC No.** 203-233-8

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

**Identified uses** Intermediate  
Formulation  
laboratory chemicals  
Polymerization

**Uses advised against** None

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

**Company/Undertaking Identification** **OQ Chemicals GmbH**  
Rheinpromenade 4A  
D-40789 Monheim  
Germany

**Product Information** Product Stewardship  
FAX: +49 (0)208 693 2053  
email: sc.psq@oq.com

### 1.4. Emergency telephone number

**Emergency telephone number** +44 (0) 1235 239 670 (UK)  
available 24/7

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Flammable liquid Category 3, H226  
Acute oral toxicity Category 4, H302  
Acute inhalation toxicity Category 2, H330  
Skin corrosion/irritation Category 1A, H314  
Serious eye damage/eye irritation Category 1, H318

#### Additional information

For full text of Hazard- and EU Hazard-statements see SECTION 16.

### 2.2. Label elements

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Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

## Hazard pictograms



## Signal word

**Danger**

## Hazard statements

H226: Flammable liquid and vapour.  
H302: Harmful if swallowed.  
H330: Fatal if inhaled.  
H314: Causes severe skin burns and eye damage.

## Precautionary statements

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233: Keep container tightly closed.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P321: Specific treatment: IF ON SKIN: Wash off with 3% acetic acid followed by large amounts of plain water for at least 5 min as a final step.  
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310: Immediately call a POISON CENTER/doctor.  
P403 + P235: Store in a well ventilated place. Keep cool.

## 2.3. Other hazards

Vapour/air-mixtures are explosive at intense warming  
Components of the product may be absorbed into the body through the skin

## PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

## Endocrine disrupting assessments

The substance is not listed on the candidate list according to Art. 59(1), REACH. The substance was not assessed as having endocrine disrupting properties according to regulation 2017/2100/EU or 2018/605/EU.

## SECTION 3: Composition / information on ingredients

### 3.1. Substances

Component	CAS-No	1272/2008/EC	Concentration (%)
2-Ethylhexylamine	104-75-6	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 2; H330 Skin Corr. 1A; H314 Eye Dam. 1; H318	> 99,0

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		ATE = 316 mg/kg (oral) ATE = 1,548 mg/L <sup>***</sup> (inhalation) (vapours) <sup>***</sup>	
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For full text of Hazard- and EU Hazard-statements see SECTION 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation

Keep at rest. Aerate with fresh air. Call a physician immediately. Symptoms of poisoning may develop many hours after exposure.

#### Skin

Wash off with 3% acetic acid followed by large amounts of plain water for at least 5 min as a final step. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

#### Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

#### Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

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

#### Main symptoms

shortness of breath, convulsions, cough, hypertensive effect.

#### Special hazard

Stomach perforation, Lung oedema.

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

#### General advice

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat as an alkaline substance (similar to ammonia). If ingested, irrigate the stomach. Treat skin and mucous membranes with antihistamine and corticoids. In case of lung irritation, first treatment with cortisone spray. Symptoms may be delayed. Later control for pneumonia and lung oedema.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

alcohol-resistant foam, dry chemical, carbon dioxide (CO<sub>2</sub>), water spray

#### Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

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

Under conditions giving incomplete combustion, hazardous gases produced may consist of:  
carbon monoxide (CO)

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carbon dioxide (CO<sub>2</sub>)  
nitrogen oxides (NO<sub>x</sub>)  
Combustion gases of organic materials must in principle be graded as inhalation poisons  
Vapours are heavier than air and may spread along floors  
Vapour/air-mixtures are explosive at intense warming

## 5.3. Advice for firefighters

### Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

### Precautions for firefighting

Cool containers / tanks with water spray. Dike and collect water used to fight fire. Water run-off and vapor cloud may be corrosive. Keep people away from and upwind of fire.

## SECTION 6: Accidental release measures

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

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.  
For emergency responders: Personal protection see section 8.

### 6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

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

#### Methods for containment

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

#### Methods for cleaning up

Soak up with inert absorbent material. DO NOT use combustible materials such as sawdust. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

### 6.4. Reference to other sections

For personal protective equipment see section 8.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Further info may be available in the appropriate Exposure scenarios in the annex to this SDS.

#### Advice on safe handling

Avoid contact with skin, eyes and clothing. Do not use compressed air for filling, discharging or handling. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms. Refill and handle product only in closed system.

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## Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

## Advice on the protection of the environment

See Section 8: Environmental exposure controls.

## Incompatible products

strong acids  
oxidizing agents

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

### Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour/air-mixtures are explosive at intense warming.

### Technical measures/Storage conditions

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care. Handle under nitrogen, protect from moisture. Keep at temperatures between -1 and 38 °C (30 and 100 °F).

### Unsuitable material

copper, including their alloys

### Temperature class

T3

## 7.3. Specific end use(s)

Intermediate

Formulation

laboratory chemicals

Polymerization

For specific end use information see the annex of this safety data sheet

## SECTION 8: Exposure controls / personal protection

### 8.1. Control parameters

#### Exposure limits European Union

No exposure limits established

#### Exposure limits UK

No exposure limits established.

#### DNEL & PNEC

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<b>DN(M)EL - long-term exposure - systemic effects - Inhalation</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - systemic effects - Inhalation</b>	High hazard (no threshold derived)
<b>DN(M)EL - long-term exposure - local effects - Inhalation</b>	4,2 mg/m <sup>3</sup>
<b>DN(M)EL - acute / short-term exposure - local effects - Inhalation</b>	High hazard (no threshold derived)
<b>DN(M)EL - long-term exposure - systemic effects - Dermal</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - systemic effects - Dermal</b>	No hazard identified
<b>DN(M)EL - long-term exposure - local effects - Dermal</b>	High hazard (no threshold derived)
<b>DN(M)EL - acute / short-term exposure - local effects - Dermal</b>	High hazard (no threshold derived)
<b>DN(M)EL - local effects - eyes</b>	High hazard (no threshold derived)

## General population

<b>DN(M)EL - long-term exposure - systemic effects - Inhalation</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - systemic effects - Inhalation</b>	No hazard identified
<b>DN(M)EL - long-term exposure - local effects - Inhalation</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - local effects - Inhalation</b>	No hazard identified
<b>DN(M)EL - long-term exposure - systemic effects - Dermal</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - systemic effects - Dermal</b>	No hazard identified
<b>DN(M)EL - long-term exposure - local effects - Dermal</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - local effects - Dermal</b>	No hazard identified
<b>DN(M)EL - long-term exposure - systemic effects - Oral</b>	No hazard identified
<b>DN(M)EL - acute / short-term exposure - systemic effects - Oral</b>	No hazard identified
<b>DN(M)EL - local effects - eyes</b>	No hazard identified

## Environment

<b>PNEC aqua - freshwater</b>	0,0022 mg/l
<b>PNEC aqua - marine water</b>	0,0002 mg/l
<b>PNEC aqua - intermittent releases</b>	0,022 mg/l
<b>PNEC STP</b>	6 mg/l
<b>PNEC sediment - freshwater</b>	1,78 mg/kg dw
<b>PNEC sediment - marine water</b>	0,178 mg/kg dw
<b>PNEC Air</b>	No hazard identified
<b>PNEC soil</b>	0,353 mg/kg dw
<b>Secondary poisoning</b>	No potential for bioaccumulation

## **8.2. Exposure controls**

### **Special adaptations (REACH)**

Not applicable.

### **Appropriate Engineering controls**

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

### **Personal protective equipment**

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## General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

## Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

## Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Equipment should conform to EN 166

## Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

<b>Suitable material</b>	nitrile rubber
<b>Evaluation</b>	according to EN 374: level 4
<b>Glove thickness</b>	approx 0,55 mm
<b>Break through time</b>	approx 100 min

<b>Suitable material</b>	polyvinylchloride
<b>Evaluation</b>	Information derived from practical experience
<b>Glove thickness</b>	approx 0,8 mm

## Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

## Respiratory protection

Respirator with A filter. Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus. Equipment should conform to EN 136 or EN 140 and EN 143.

## Environmental exposure controls

Use product only in closed system. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

## Additional advice

Further details on substance data can be found in the registration dossier under the following link:  
<http://echa.europa.eu/information-on-chemicals/registered-substances>. For specific exposure controls see the annex to this safety data sheet.

## SECTION 9: Physical and chemical properties

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

<b>Physical state</b>	liquid***
<b>Colour</b>	colourless
<b>Odour</b>	ammonia-like
<b>Odour threshold</b>	No data available
<b>Melting point/freezing point</b>	< -90 °C (Pour point) @ 1013 hPa
<b>Method</b>	DIN ISO 3016

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<b>Boiling point or initial boiling point and boiling range</b>	165,6 °C @ 1013 hPa				
<b>Method</b>	OECD 103				
<b>Flammability</b>	Ignitable				
<b>Lower explosion limit</b>	1,1 Vol %				
<b>Upper explosion limit</b>	10,8 Vol %				
<b>Flash point</b>	53 °C @ 1013 hPa				
<b>Method</b>	closed cup, DIN EN ISO 2719, ASTM D-93				
<b>Autoignition temperature</b>	275 °C @ 989 hPa				
<b>Method</b>	DIN 51794				
<b>Decomposition temperature</b>	No data available				
<b>pH</b>	11,5 (1 g/l in water @ 20 °C (68 °F)) DIN 19268				
<b>Kinematic Viscosity</b>	1,421 mm <sup>2</sup> /s @ 20 °C***				
<b>Method</b>	ASTM D445***				
<b>Solubility</b>	2,2 g/l @ 20 °C, OECD 105				
<b>Partition coefficient n-octanol/water (log value)</b>	1,8 @ 25 °C (77 °F)				
<b>Vapour pressure</b>					
Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
3	0,3	0,002	20	68	DIN EN 13016-2
58	5,8	0,057	80	176	DIN EN 13016-2

<b>Density and/or relative density</b>			
Values	@ °C	@ °F	Method
0,788	20	68	DIN 51757
<b>Relative vapour density</b>	4,46 (Air = 1) @ 20 °C (68 °F)		
<b>Particle characteristics</b>	not applicable		

## 9.2. Other information

<b>Explosive properties</b>	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
<b>Oxidizing properties</b>	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
<b>Molecular weight</b>	129,24
<b>Molecular formula</b>	C <sub>8</sub> H <sub>19</sub> N
<b>log K<sub>oc</sub></b>	3,91 @ pH 7 @ 25 °C calculated
<b>Dissociation constant</b>	pK <sub>a</sub> 10,5 @ 24,2 °C (75,6 °F) OECD 112
<b>Surface tension</b>	39 mN/m @ 20 °C (68 °F)
<b>Evaporation rate</b>	No data available

## SECTION 10: Stability and Reactivity

### 10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

### 10.2. Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions



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Hazardous polymerisation does not occur.

## 10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

## 10.5. Incompatible materials

strong acids, oxidizing agents.

## 10.6. Hazardous decomposition products

No decomposition if stored and applied as directed. If heated to thermal decomposition the following decomposition products may occur depending on the conditions. carbon monoxide (CO). nitrogen oxides (NOx). cyanides. nitric acid. nitriles.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Likely routes of exposure** Ingestion, Inhalation, Eye contact, Skin contact

<b>Acute toxicity</b>				
<b>2-Ethylhexylamine (104-75-6)</b>				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	316 mg/kg	rat, male/female	
Inhalative	LC50	< 1,548 mg/l (4h)	rat, male/female	OECD 403

#### **2-Ethylhexylamine, CAS: 104-75-6**

##### **Assessment**

The available data lead to the classification given in section 2

<b>Irritation and corrosion</b>				
<b>2-Ethylhexylamine (104-75-6)</b>				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	corrosive	OECD 404	
Eyes	rabbit	corrosive		

#### **2-Ethylhexylamine, CAS: 104-75-6**

##### **Assessment**

The available data lead to the classification given in section 2

For respiratory irritation, no data are available

<b>Sensitization</b>				
<b>2-Ethylhexylamine (104-75-6)</b>				
Target Organ Effects	Species	Evaluation	Method	
Skin	mouse	not sensitizing	MEST	

#### **2-Ethylhexylamine, CAS: 104-75-6**

##### **Assessment**

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

Skin sensitization

For respiratory sensitization, no data are available

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<b>Subacute, subchronic and prolonged toxicity</b>				
<b>2-Ethylhexylamine (104-75-6)</b>				
Type	Dose	Species	Method	
Subacute toxicity	NOAEL: 100 mg/kg/d	rat, male/female	OECD 422 Oral	read across
Subchronic toxicity	NOAEC: 25 mg/m <sup>3</sup> (90 d) Local effects	rat, male/female	OECD 413	Inhalation
Subchronic toxicity	NOEC: 125 mg/m <sup>3</sup> (90 d) systemic effects	rat, male/female	OECD 413	Inhalation

## **2-Ethylhexylamine, CAS: 104-75-6**

### **Assessment**

Based on available data, the classification criteria are not met for:  
STOT RE

<b>Carcinogenicity, Mutagenicity, Reproductive toxicity</b>					
<b>2-Ethylhexylamine (104-75-6)</b>					
Type	Dose	Species	Evaluation	Method	
Carcinogenicity	No data available				
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study
Mutagenicity		mouse lymphoma cells	negative	OECD 476 (Mammalian Gene Mutation) HPRT	In vitro study read across
Mutagenicity		mouse	negative	OECD 474	in vivo read across
Reproductive toxicity	NOAEL 100 mg/kg/d	rat, male/female		OECD 422, Oral	Reproduction / developmental Toxicity read across
Developmental Toxicity	NOAEL 75 mg/kg/d	rat		OECD 414, Oral	Maternal toxicity Developmental toxicity

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### **CMR Classification**

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

### **Evaluation**

In vitro tests did not show mutagenic effects  
Did not show mutagenic effects in animal experiments  
No developmental effects in the absence of maternal toxicity  
For carcinogenicity, no data are available

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### **Main symptoms**

shortness of breath, convulsions, cough, hypertensive effect.

### **Target Organ Systemic Toxicant - Single exposure**

Based on available data, the classification criteria are not met for:  
STOT SE

### **Target Organ Systemic Toxicant - Repeated exposure**

Based on available data, the classification criteria are not met for:  
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## Aspiration toxicity

no data available Due to the viscosity, this product does not present an aspiration hazard

## 11.2. Information on other hazards

### Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

### 2-Ethylhexylamine, CAS: 104-75-6

### Other adverse effects

Components of the product may be absorbed into the body through the skin.

### Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

<http://echa.europa.eu/information-on-chemicals/registered-substances>.

## SECTION 12: Ecological information

### 12.1. Toxicity

Acute aquatic toxicity			
2-Ethylhexylamine (104-75-6)			
Species	Exposure time	Dose	Method
Daphnia magna (Water flea)	24h	EC50: 2,2 mg/l	DIN 38412, part 11 Mobility
Leuciscus idus (Golden orfe)	96h	EC50: >100 - < 500 mg/l (neutralized)	DIN 38412, part 15
Leuciscus idus (Golden orfe)	96h	EC50: >46,4 - < 68,1 mg/l (not neutralized)	DIN 38412, part 15
Desmodesmus subspicatus	72h	EC50: 10,8 mg/l (Growth rate)	OECD 201
Activated sludge (domestic)	30 min	EC50: ~ 600 mg/l	OECD 209

### Long term toxicity

#### 2-Ethylhexylamine (104-75-6)

Type	Species	Dose	Method
Aquatic toxicity	Desmodesmus subspicatus	EC10: 3,4 mg/l (72 h)	OECD 201

### 12.2. Persistence and degradability

#### 2-Ethylhexylamine, CAS: 104-75-6

#### Biodegradation

70 - 80 % (28 d), activated sludge, non-adapted, domestic, aerobic, ISO 14593.

#### Abiotic Degradation

#### 2-Ethylhexylamine (104-75-6)

Type	Result	Method
Hydrolysis	not expected	
Photolysis	Half-life (DT50): 9,45 h	calculated

### 12.3. Bioaccumulative potential

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<b>2-Ethylhexylamine (104-75-6)</b>		
Type	Result	Method
log Pow	1,8 @ 25 °C (77 °F)	
BCF	24,9	calculated

## 12.4. Mobility in soil

<b>2-Ethylhexylamine (104-75-6)</b>		
Type	Result	Method
Surface tension	39 mN/m @ 20 °C (68 °F)	OECD 115
Adsorption/Desorption	log Koc: 3,91 @ pH 7 @ 25 °C	calculated
Distribution to environmental compartments	Percent distribution in Media: Air: 72,5% Soil: 1,3% Water: 24,9% Sediment: 1,3% Suspended sediment: 0% Biota: 0%	calculated

## 12.5. Results of PBT and vPvB assessment

### 2-Ethylhexylamine, CAS: 104-75-6

#### **PBT and vPvB assessment**

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

## 12.6. Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

## 12.7. Other adverse effects

### 2-Ethylhexylamine, CAS: 104-75-6

No data available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### **Product Information**

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Hazardous waste according to European Waste Catalogue (EWC)

#### **Uncleaned empty packaging**

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

## SECTION 14: Transport information

### ADR/RID

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<b>14.1. UN number or ID number</b>	UN 2276
<b>14.2. UN proper shipping name</b>	2-Ethylhexylamine
<b>14.3. Transport hazard class(es)</b>	3
Subsidiary Risk	8
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	no
<b>14.6. Special precautions for user</b>	
ADR Tunnel restriction code	(D/E)
Classification Code	FC
Hazard Number	38

## ADN

ADN Container

<b>14.1. UN number or ID number</b>	UN 2276
<b>14.2. UN proper shipping name</b>	2-Ethylhexylamine
<b>14.3. Transport hazard class(es)</b>	3
Subsidiary Risk	8
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	no
<b>14.6. Special precautions for user</b>	
Classification Code	FC
Hazard Number	38

## ICAO-TI / IATA-DGR

<b>14.1. UN number or ID number</b>	UN 2276
<b>14.2. UN proper shipping name</b>	2-Ethylhexylamine
<b>14.3. Transport hazard class(es)</b>	3
Subsidiary Risk	8
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	no
<b>14.6. Special precautions for user</b>	no data available

## IMDG

<b>14.1. UN number or ID number</b>	UN 2276
<b>14.2. UN proper shipping name</b>	2-Ethylhexylamine
<b>14.3. Transport hazard class(es)</b>	3
Subsidiary Risk	8
<b>14.4. Packing group</b>	III
<b>14.5. Environmental hazards</b>	no
<b>14.6. Special precautions for user</b>	
EmS	F-E, S-C
<b>14.7. Maritime transport in bulk according to IMO instruments</b>	***
Product name	2-Ethylhexylamine
Ship type	2
Pollution category	Y
Hazard class	S/P***

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## SECTION 15: Regulatory information

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

#### Regulation 1272/2008, Annex VI

not listed

#### DI 2012/18/EU (Seveso III)

##### Category

Annex I, part 1:  
H2  
P5a - c; depending on conditions

#### DI 1999/13/EC (VOC Guideline)

Component	Status
2-Ethylhexylamine CAS: 104-75-6	regulated

#### The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758

Component	Status
2-Ethylhexylamine CAS: 104-75-6	The substance is/will be pre-registered

For details and further information please refer to the original regulation.

#### International Inventories

##### **2-Ethylhexylamine, CAS: 104-75-6**

AICS (AU)  
DSL (CA)  
IECSC (CN)  
EC-No. 2032338 (EU)  
ENCS (2)-133 (JP)  
ISHL (2)-133 (JP)  
KECI KE-13782 (KR)  
INSQ (MX)  
PICCS (PH)  
TSCA (US)  
NZIoC (NZ)\*\*\*  
TCSI (TW)

#### National regulatory information Great Britain

##### **Releases to air (Pollution Inventory Substances)**

not subject

##### **Releases to water (Pollution Inventory Substances)**

not subject

##### **Releases to sewer (Pollution Inventory Substances)**

not subject

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For details and further information please refer to the original regulation

## 15.2. Chemical safety assessment

The Chemical Safety Report (CSR) has been generated. For Exposure Scenarios see the annex.

## SECTION 16: Other information

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

H226: Flammable liquid and vapour.

H302: Harmful if swallowed.

H330: Fatal if inhaled.

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

### Abbreviations

A table of terms and abbreviations can be found under the following link:

[http://echa.europa.eu/documents/10162/13632/information\\_requirements\\_r20\\_en.pdf](http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf)

### Training advice

For effective first-aid, special training / education is needed.

### Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

### Further information for the safety data sheet

Changes against the previous version are marked by \*\*\*. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage ([www.chemicals.oq.com](http://www.chemicals.oq.com)).

### Disclaimer

**For industrial use only.** The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ Chemicals makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

**End of Safety Data Sheet**

# Annex to the extended Safety Data Sheet (eSDS)

## General information

A quantitative approach used to conclude safe use for:

Long term local hazards via inhalation

Environmental compartment

Assessment tool used:

Chesar 3.3

A qualitative approach used to conclude safe use for:

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Acute local hazards via inhalation  
Acute systemic hazards via inhalation  
Long term local hazards via skin  
Acute local hazards via skin  
Local hazards via eyes  
The RMMs described suffice to control risks for both local and systemic effects

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described below and you are unsure if they are also safe

### Operational conditions and risk management measures

Any measure to eliminate exposure should be considered  
Containment of source except for short term exposure (e.g. taking sample)  
Design closed system to allow for easy maintenance  
If possible keep equipment under negative pressure  
Control staff entry to work area  
Ensure all equipment well maintained  
Regular cleaning of work area  
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.  
Training for staff on good practice  
Procedures and training for emergency decontamination and disposal  
Good standard of personal hygiene  
Recording of any 'near miss' situations  
Face-shield  
Substance/Task appropriate respirator, based on potential exposure to the use  
Substance/task appropriate gloves  
Full skin coverage with appropriate light-weight barrier material  
Chemical goggles or safety glasses  
Substance/Task appropriate respirator, based on potential exposure to the use

### Exposure scenario identification

- 1 **Formulation & (re)packing of substances and mixtures**
- 2 **Industrial use resulting in manufacture of another substance (use of intermediates)**
- 3 **Use in laboratories**
- 4 **Polymerisation**
- 5 **Polymerisation**

**Number of the ES 1**

Short title of the exposure scenario

**Formulation & (re)packing of substances and mixtures**

### List of use descriptors

#### Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

#### Process categories [PROC]

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



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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)

## Environmental release categories [ERC]

ERC2: Formulation of preparations (mixtures)

## Product characteristics

Refer to attached safety data sheets

## Processes and activities covered by the exposure scenario

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

## Further explanations

Industrial use

Assumes use at not more than 20°C above ambient temperature (unless stated differently)

Assumes an advanced standard of occupational Health and Safety Management System

## Contributing Scenarios

### Number of the contributing scenario

1

### Contributing exposure scenario controlling environmental exposure for ERC 2

#### Further specification

release factors for (Sp)ERC were modified

#### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently), Liquid, vapour pressure < 0,5 kPa at STP.

#### Amounts used

Daily amount per site: 0.8 to

Annual amount per site: 8 to

Fraction of Regional tonnage used locally: 1

#### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 1%

Release fraction to wastewater from process: 0.03%

Release fraction to soil from process: 0.01%

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

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

Water flow in sewage/river (m<sup>3</sup>/day): 18000

The minimum grade of elimination in the sewage plant is (%): 88.13

On-site treatment of off-air - Incineration/thermal oxidation (%): 98

#### Conditions and measures related to external treatment of waste for disposal

Dispose of waste product or used containers according to local regulations

### Number of the contributing scenario

2

### Contributing exposure scenario controlling worker exposure for PROC 1

#### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

#### Frequency and duration of use

8 h (full shift)

#### Other given operational conditions affecting workers exposure

Indoor and outdoor use

Assumes an advanced standard of occupational Health and Safety Management System

#### Technical conditions and measures to control dispersion from source towards the worker

provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Wear suitable gloves (tested to EN374) and eye protection.

**Number of the contributing scenario** 3  
**Contributing exposure scenario controlling worker exposure for PROC 2**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

### Technical conditions and measures to control dispersion from source towards the worker

provide a basic standard of general ventilation (1 to 3 air changes per hour). with local exhaust ventilation. Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection.

**Number of the contributing scenario** 4  
**Contributing exposure scenario controlling worker exposure for PROC 3**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

### Technical conditions and measures to control dispersion from source towards the worker

Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative). provide a good standard of controlled ventilation (5 to 10 air changes per hour) .

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

Wear suitable gloves (tested to EN374) and eye protection.

**Number of the contributing scenario** 5  
**Contributing exposure scenario controlling worker exposure for PROC 4**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

### Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

**Number of the contributing scenario** 6  
**Contributing exposure scenario controlling worker exposure for PROC 5**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

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Liquid

## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

## Number of the contributing scenario

7

## Contributing exposure scenario controlling worker exposure for PROC 8a

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

## Number of the contributing scenario

8

## Contributing exposure scenario controlling worker exposure for PROC 8b

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of controlled ventilation (10 to 15 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 95 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection.

## Number of the contributing scenario

9

## Contributing exposure scenario controlling worker exposure for PROC 9

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

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Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

## Exposure estimation and reference to its source

### Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 1.42E-3 mg/l; RCR: 0.648
Fresh Water (Sediment)	PEC: 0.049 mg/kg dw; RCR: 0.027
Marine Water (Pelagic)	PEC: 1.42E-4 mg/l; RCR: 0.648
Marine Water (Sediment)	PEC: 4.88E-3 mg/kg dw; RCR: 0.027
Agricultural Soil	PEC: 9.67E-3 mg/kg dw; RCR: 0.027
Sewage Treatment Plant (Effluent)	PEC: 0.014 mg/l; RCR: 0.01

### Human exposure prediction (oral, dermal, inhalative)

Oral exposure is not expected to occur. EE(inhal): Estimated inhalative long-term exposure [mg/m<sup>3</sup>].

Proc 1	EE(inhal): 0.054
Proc 2	EE(inhal): 2.693
Proc 3	EE(inhal): 1.616
Proc 4	EE(inhal): 0.754
Proc 5	EE(inhal): 1.885
Proc 8a	EE(inhal): 1.885
Proc 8b	EE(inhal): 2.02
Proc 9	EE(inhal): 1.885

### Risk characterisation

RCR(inhal): inhalative risk characterisation ratio.

Proc 1	RCR(inhal): 0.013
Proc 2	RCR(inhal): 0.641
Proc 3	RCR(inhal): 0.385
Proc 4	RCR(inhal): 0.18
Proc 5	RCR(inhal): 0.449
Proc 8a	RCR(inhal): 0.449
Proc 8b	RCR(inhal): 0.481
Proc 9	RCR(inhal): 0.449

## Number of the ES 2

Short title of the exposure scenario

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

## List of use descriptors

### Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

### Process categories [PROC]

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)

### Environmental release categories [ERC]

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ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates)

## Product characteristics

Refer to attached safety data sheets

## Processes and activities covered by the exposure scenario

Manufacture of the substance or use as an intermediate, process chemical or extracting agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

## Further explanations

Industrial use

Assumes use at not more than 20°C above ambient temperature (unless stated differently)

Assumes an advanced standard of occupational Health and Safety Management System

## Contributing Scenarios

<b>Number of the contributing scenario</b>	<b>1</b>
<b>Contributing exposure scenario controlling environmental exposure for ERC 6a</b>	

### Further specification

release factors for (Sp)ERC were modified.

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently), Liquid, vapour pressure < 0,5 kPa at STP.

### Amounts used

Daily amount per site: 1 to

Annual amount per site: 30 to

Fraction of Regional tonnage used locally: 1

### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 0.02%

Release fraction to wastewater from process: 0.03%

Release fraction to soil from process: 0.1%

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

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

Water flow in sewage/river (m<sup>3</sup>/day): 18000

The minimum grade of elimination in the sewage plant is (%): 88.13

On-site treatment of off-air - Incineration/thermal oxidation (%): 98

### Conditions and measures related to external treatment of waste for disposal

Dispose of waste product or used containers according to local regulations

<b>Number of the contributing scenario</b>	<b>2</b>
<b>Contributing exposure scenario controlling worker exposure for PROC 1</b>	

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor and outdoor use

### Technical conditions and measures to control dispersion from source towards the worker

provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Wear suitable gloves (tested to EN374) and eye protection.

<b>Number of the contributing scenario</b>	<b>3</b>
<b>Contributing exposure scenario controlling worker exposure for PROC 2</b>	

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## Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a basic standard of general ventilation (1 to 3 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative); 902 % (dermal).

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

Wear suitable gloves (tested to EN374) and eye protection.

## Number of the contributing scenario

4

## Contributing exposure scenario controlling worker exposure for PROC 3

## Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of controlled ventilation (5 to 10 air changes per hour) . Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection.

## Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 1.78E-3 mg/l; RCR: 0.809
Fresh Water (Sediment)	PEC: 0.061 mg/kg dw; RCR: 0.034
Marine Water (Pelagic)	PEC: 1.78E-4 mg/l; RCR: 0.809
Marine Water (Sediment)	PEC: 6.1E-3 mg/kg dw; RCR: 0.034
Agricultural Soil	PEC: 0.012 mg/kg dw; RCR: 0.034
Sewage Treatment Plant (Effluent)	PEC: 0.018 mg/l; RCR: 0.01

## Human exposure prediction (oral, dermal, inhalative)

Oral exposure is not expected to occur. EE(inhal): Estimated inhalative long-term exposure [mg/m<sup>3</sup>].

Proc 1	EE(inhal): 0.054
Proc 2	EE(inhal): 2.693
Proc 3	EE(inhal): 1.616

## Risk characterisation

RCR(inhal): inhalative risk characterisation ratio.

Proc 1	RCR(inhal): 0.013
Proc 2	RCR(inhal): 0.641
Proc 3	RCR(inhal): 0.385

**Number of the ES 3**

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Short title of the exposure scenario

**Use in laboratories**

## List of use descriptors

### Sector of uses [SU]

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Process categories [PROC]

PROC15: Use as laboratory reagent

### Environmental release categories [ERC]

ERC8a: Wide dispersive indoor use of processing aids in open systems

### Product characteristics

Refer to attached safety data sheets

### Further explanations

Professional use

Assumes use at not more than 20°C above ambient temperature (unless stated differently)

Assumes a good basic standard of occupational hygiene is implemented

## Contributing Scenarios

**Number of the contributing scenario** 1  
**Contributing exposure scenario controlling environmental exposure for ERC 8a**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently), liquid.

### Amounts used

daily wide dispersive use: 0.00000055 to/d

### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 1%

Release fraction to wastewater from process: 1%

Release fraction to soil from process: 0%

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

The minimum grade of elimination in the sewage plant is (%): 88.13

### Conditions and measures related to external treatment of waste for disposal

Dispose of waste product or used containers according to local regulations

**Number of the contributing scenario** 2  
**Contributing exposure scenario controlling worker exposure for PROC 15**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

### Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 80 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

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## Exposure estimation and reference to its source

### Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 3.71E-6 mg/l; RCR: 0.01
Fresh Water (Sediment)	PEC: 1.27E-4 mg/kg dw; RCR: 0.01
Marine Water (Pelagic)	PEC: 3.66E-7 mg/l; RCR: 0.01
Marine Water (Sediment)	PEC: 1.25E-5 mg/kg dw; RCR: 0.01
Agricultural Soil	PEC: 2.22E-5 mg/kg dw; RCR: 0.01
Sewage Treatment Plant (Effluent)	PEC: 3.27E-5 mg/l; RCR: 0.01

### Human exposure prediction (oral, dermal, inhalative)

Oral exposure is not expected to occur. EE(inhal): Estimated inhalative long-term exposure [mg/m<sup>3</sup>].

Proc 15 EE(inhal): 0.754

### Risk characterisation

RCR(inhal): inhalative risk characterisation ratio.

Proc 15 RCR(inhal): 0.18

## Number of the ES 4

Short title of the exposure scenario

### Polymerisation

## List of use descriptors

### Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

### Process categories [PROC]

PROC7: Industrial spraying  
PROC10: Roller application or brushing  
PROC13: Treatment of articles by dipping and pouring

### Environmental release categories [ERC]

ERC5: Industrial use resulting in inclusion into or onto a matrix

### Product characteristics

Refer to attached safety data sheets

### Further explanations

Industrial use  
Assumes use at not more than 20°C above ambient temperature (unless stated differently)  
Assumes an advanced standard of occupational Health and Safety Management System

## Contributing Scenarios

Number of the contributing scenario

1

Contributing exposure scenario controlling environmental exposure for ERC 5

Further specification



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release factors for (Sp)ERC were modified.

## Product characteristics

liquid.

## Amounts used

Daily amount per site: 0.3 to

Annual amount per site: 6 to

Fraction of Regional tonnage used locally: 1

## Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 0.01%

Release fraction to wastewater from process: 0.03%

Release fraction to soil from process: 1%

## Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

Water flow in sewage/river (m<sup>3</sup>/day): 18000

Estimated substance removal from wastewater via domestic sewage treatment (%): 88.13

On-site treatment of off-air - Incineration/thermal oxidation (%): 98

## Conditions and measures related to external treatment of waste for disposal

Dispose of waste product or used containers according to local regulations

## Number of the contributing scenario

2

## Contributing exposure scenario controlling worker exposure for PROC 7

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

### Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of controlled ventilation (5 to 10 air changes per hour) . Effectiveness of LEV (local exhaust ventilation): 95 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

## Number of the contributing scenario

3

## Contributing exposure scenario controlling worker exposure for PROC 10

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

### Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of controlled ventilation (5 to 10 air changes per hour) . Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

## Number of the contributing scenario

4

## Contributing exposure scenario controlling worker exposure for PROC 13

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

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## Frequency and duration of use

8 h (full shift)

## Other given operational conditions affecting workers exposure

Indoor use

## Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

## Exposure estimation and reference to its source

### Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 5.34E-4 mg/l; RCR: 0.243
Fresh Water (Sediment)	PEC: 0.018 mg/kg dw; RCR: 0.01
Marine Water (Pelagic)	PEC: 5.34E-5 mg/l; RCR: 0.243
Marine Water (Sediment)	PEC: 1.83E-3 mg/kg dw; RCR: 0.01
Agricultural Soil	PEC: 3.63E-3 mg/kg dw; RCR: 0.01
Sewage Treatment Plant (Effluent)	PEC: 5.34E-3 mg/l; RCR: 0.01

### Human exposure prediction (oral, dermal, inhalative)

Oral exposure is not expected to occur. EE(inhal): Estimated inhalative long-term exposure [mg/m<sup>3</sup>].

Proc 7	EE(inhal): 2.02
Proc 10	EE(inhal): 0.808
Proc 13	EE(inhal): 1.885

### Risk characterisation

RCR(inhal): inhalative risk characterisation ratio.

Proc 7	RCR(inhal): 0.481
Proc 10	RCR(inhal): 0.192
Proc 13	RCR(inhal): 0.449

## Number of the ES 5

Short title of the exposure scenario

### Polymerisation

## List of use descriptors

### Sector of uses [SU]

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Process categories [PROC]

PROC10: Roller application or brushing  
PROC11: Non industrial spraying  
PROC13: Treatment of articles by dipping and pouring

### Environmental release categories [ERC]

ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix

### Product characteristics

Refer to attached safety data sheets

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## Further explanations

Professional use

Assumes use at not more than 20°C above ambient temperature (unless stated differently)

## Contributing Scenarios

**Number of the contributing scenario** 1  
**Contributing exposure scenario controlling environmental exposure for ERC 8c**

### Amounts used

daily wide dispersive use: 0.0000033 to/d

### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 15%

Release fraction to wastewater from process: 30%

Release fraction to soil from process: 0%

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

The minimum grade of elimination in the sewage plant is (%): 88.13

### Conditions and measures related to external treatment of waste for disposal

Dispose of waste product or used containers according to local regulations

**Number of the contributing scenario** 2  
**Contributing exposure scenario controlling worker exposure for PROC 10**

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

Assumes an advanced standard of occupational Health and Safety Management System

### Technical conditions and measures to control dispersion from source towards the worker

Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative). provide a good standard of controlled ventilation (5 to 10 air changes per hour) .

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

Wear respiratory protection (Efficiency: 95 %). Wear suitable gloves (tested to EN374) and eye protection.

**Number of the contributing scenario** 3  
**Contributing exposure scenario controlling worker exposure for PROC 11**

### Product characteristics

Covers percentage substance in the product up to 1 %

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

Assumes a good basic standard of occupational hygiene is implemented

### Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 80 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 95 %).

**Number of the contributing scenario** 4

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## Contributing exposure scenario controlling worker exposure for PROC 13

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently)

Liquid

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor use

Assumes an advanced standard of occupational Health and Safety Management System

### Technical conditions and measures to control dispersion from source towards the worker

provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Effectiveness of LEV (local exhaust ventilation): 90 % (inhalative).

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

Wear suitable gloves (tested to EN374) and eye protection. Wear respiratory protection (Efficiency: 90 %).

### Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 6.32E-6 mg/l; RCR: 0.01
Fresh Water (Sediment)	PEC: 2.17E-4 mg/kg dw; RCR: 0.01
Marine Water (Pelagic)	PEC: 6.27E-7 mg/l; RCR: 0.01
Marine Water (Sediment)	PEC: 2.15E-5 mg/kg dw; RCR: 0.01
Agricultural Soil	PEC: 3.99E-5 mg/kg dw; RCR: 0.01
Sewage Treatment Plant (Effluent)	PEC: 5.88E-5 mg/l; RCR: 0.01

### Human exposure prediction (oral, dermal, inhalative)

Oral exposure is not expected to occur. EE(inhal): Estimated inhalative long-term exposure [mg/m<sup>3</sup>].

Proc 10	EE(inhal): 0.808
Proc 11	EE(inhal): 1.885
Proc 13	EE(inhal): 1.885

### Risk characterisation

RCR(inhal): inhalative risk characterisation ratio.

Proc 10	RCR(inhal): 0.192
Proc 11	RCR(inhal): 0.449
Proc 13	RCR(inhal): 0.449

### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

### associated uses:

Other combinations of operational conditions may also be safe. Please contact OQ in case your local operational conditions differ from the ones described above and you are unsure if they are also safe

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