

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

Version 6.15  
Revision Date 23.12.2025  
Print Date 10.06.2026

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Benzene

Product Number : 319953  
Brand : SIGALD  
Index-No. : 601-020-00-8  
REACH No. : 01-2119447106-44-XXXX  
CAS-No. : 71-43-2

### 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 : Merck Life Science OY  
Keilaranta 6,  
FI-02150 ESPOO

Telephone : +358 9 350 9250  
Fax : +358 9 350 9255  
E-mail address : TechnicalService@merckgroup.com

### 1.4 Emergency telephone number

Emergency Phone # : +(358)-942419014 (CHEMTREC)  
112 (Hätäkeskuslaitos)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2 H225: Highly flammable liquid and vapour.

Skin irritation, Category 2 H315: Causes skin irritation.

Eye irritation, Category 2 H319: Causes serious eye irritation.


Germ cell mutagenicity, Category 1B H340: May cause genetic defects.



Carcinogenicity, Category 1A	H350: May cause cancer.
Specific target organ toxicity - repeated exposure, Category 1, Blood	H372: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

## 2.2 Label elements

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

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	<p>H225 Highly flammable liquid and vapour.</p> <p>H304 May be fatal if swallowed and enters airways.</p> <p>H315 Causes skin irritation.</p> <p>H319 Causes serious eye irritation.</p> <p>H340 May cause genetic defects.</p> <p>H350 May cause cancer.</p> <p>H372 Causes damage to organs (Blood) through prolonged or repeated exposure.</p> <p>H412 Harmful to aquatic life with long lasting effects.</p>
Precautionary statements	:	<p><b>Prevention:</b></p> <p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P273 Avoid release to the environment.</p> <p><b>Response:</b></p> <p>P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.</p> <p>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P331 Do NOT induce vomiting.</p>



## Additional Labelling

Restricted to professional users.

### Reduced Labelling (<= 125 ml)

Hazard pictograms :



Signal word	Danger
Hazard Statements	
H340	May cause genetic defects.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H304	May be fatal if swallowed and enters airways.
H412	Harmful to aquatic life with long lasting effects.
Precautionary Statements	
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331	Do NOT induce vomiting.
Supplemental Hazard Statements	none

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Index-No. : 601-020-00-8

EC-No. : 200-753-7

#### Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)	M-Factor, SCL, ATE
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benzene	71-43-2 200-753-7	>= 90 - <= 100	
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## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.
- If inhaled : After inhalation: fresh air. Call in physician.
- In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
- In case of eye contact : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
- If swallowed : After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

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

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 : Carbon dioxide (CO<sub>2</sub>)  
Foam  
Dry powder
- Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.
- For this substance/mixture no limitations of extinguishing agents are given.

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

- Specific hazards during fire fighting : Flash back possible over considerable distance. Container explosion may occur under fire conditions. Combustible. Pay attention to flashback. Vapours are heavier than air and may spread along



floors.  
Development of hazardous combustion gases or vapours possible in the event of fire.  
Forms explosive mixtures with air at ambient temperatures.

Hazardous combustion products : Carbon oxides

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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

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## SECTION 6: Accidental release measures

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

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

For personal protection see section 8.

### 6.2 Environmental precautions

Environmental precautions : Do not let product enter drains.  
Risk of explosion.

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

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

### 6.4 Reference to other sections

For disposal considerations see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Work under hood. Do not inhale substance/mixture.  
Avoid generation of vapours/aerosols.



- Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.
- Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

## 7.2 Conditions for safe storage, including any incompatibilities

- Further information on storage conditions : Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class (TRGS 510) : 3, Flammable liquids

Packaging material : Suitable material: Any Metal Drum

## 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

#### Occupational Exposure Limits

### 8.2 Exposure controls

#### Personal protective equipment

- Eye/face protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
Safety glasses

Hand protection

- Material : Fluorinated rubber  
Break through time : 480 min  
Glove thickness : 0,7 mm  
Protective index : Full contact  
Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)

- Material : Fluorinated rubber  
Break through time : 480 min  
Glove thickness : 0,7 mm  
Protective index : Splash contact  
Manufacturer : Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Manufacturer : data source: KCL GmbH, D-36124 Eichenzell, phone



+49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Remarks : 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 Regulation (EU) 2016/425 and the standard EN 374 derived from it.  
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.

Skin and body protection : Flame retardant antistatic protective clothing.

Respiratory protection : required when vapours/aerosols are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

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Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter A-(P3)

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

Filter type ABEK

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

### **Environmental exposure controls**

Advice : Do not let product enter drains.  
Risk of explosion.



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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	: liquid
Color	: clear, colourless
Odor	: No data available
Melting point/ range	: 5,5 °C Method: lit.
Boiling point/boiling range	: 80 °C Method: lit.
Flammability	: No data available
Upper explosion limit / Upper flammability limit	: Upper explosion limit 8,0 %(V)
Lower explosion limit / Lower flammability limit	: Lower explosion limit 1,2 %(V)
Flash point	: -11 °C(1.013,5 hPa) Method: DIN 51755 Part 1
Autoignition temperature	: 498 °C (1.013,5 hPa)
Decomposition temperature	: No data available
pH	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: 0,604 mm <sup>2</sup> /s (25 °C)
Flow time	: No data available
Solubility(ies)	
Water solubility	: ca. 1,88 g/l (23,5 °C) pH: 7 soluble
Partition coefficient: n- octanol/water	: log Pow: 2,13 (25 °C) pH: 7



Bioaccumulation is not expected.  
(ECHA)

Vapor pressure	: 100 hPa (20 °C)
Relative density	: No data available
Density	: 0,874 g/cm <sup>3</sup> (25 °C) Method: lit.
Relative vapour density	: No data available

## 9.2 Other information

Explosives	: Not classified as explosive.
Oxidizing properties	: none
Burning rate	: No data available
Self-ignition	: 498 °C 1.013,5 hPa
Evaporation rate	: No data available
Molecular weight	: 78,11 g/mol

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapours may form explosive mixture with air.  
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### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .  
The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Exothermic reaction with:  
  
halogens  
  
Halogenated hydrocarbon  
in the presence of:  
Light metals  
Risk of explosion with:



halogen-halogen compounds  
Nitric acid  
Boranes  
Ozone  
peroxi compounds  
perchlorates  
permanganic acid  
perchloryl fluoride  
Strong oxidizing agents  
Chlorine  
fluorides  
uranium hexafluoride  
Oxygen  
liquid  
Risk of ignition or formation of inflammable gases or  
vapours with:  
chromium(VI) oxide  
Fluorine  
nitryl compounds  
Oxygen  
oxyhalogenic compounds  
Violent reactions possible with:  
  
mineral acids  
sulfur

#### 10.4 Conditions to avoid

Conditions to avoid : Warming.  
  
Warming.

#### 10.5 Incompatible materials

No data available

#### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

LD50 Oral - Rat - male - > 2.000 mg/kg  
(OECD Test Guideline 401)

Symptoms: Nausea

LD50 Oral - Rat - male and female - 3.002 mg/kg  
(OECD Test Guideline 401)

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Symptoms: mucosal irritations

LD50 Dermal - Rabbit - 13.630 mg/kg

Remarks: (IUCLID)



**Skin corrosion/irritation**

Skin - Rabbit

Result: irritating

(OECD Test Guideline 404)

Remarks: (ECHA)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Irritating to eyes.

(OECD Test Guideline 405)

Remarks: (IUCLID)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Respiratory or skin sensitization**

Maximisation Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

**Germ cell mutagenicity**

May cause genetic defects.

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Mutagenicity (mammal cell test): micronucleus.

Species: Mouse

Cell type: Bone marrow

Application Route: inhalation (vapour)

Method: OECD Test Guideline 474

Result: positive

**Carcinogenicity**

May cause cancer. Positive evidence from human epidemiological studies.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

- Blood

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)



### **Aspiration hazard**

Aspiration may cause pulmonary oedema and pneumonitis.

## **11.2 Additional Information**

### **Endocrine disrupting properties**

#### **Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - No observed adverse effect level - 600 mg/kg

RTECS: CY1400000

Nausea, Dizziness, Headache, narcosis, Inhalation of high concentrations of benzene may have an initial stimulatory effect on the central nervous system characterized by exhilaration, nervous excitation and/or giddiness, depression, drowsiness, or fatigue. The victim may experience tightness in the chest, breathlessness, and loss of consciousness. Tremors, convulsions, and death due to respiratory paralysis or circulatory collapse can occur in a few minutes to several hours following severe exposures. Aspiration of small amounts of liquid immediately causes pulmonary edema and hemorrhage of pulmonary tissue. Direct skin contact may cause erythema. Repeated or prolonged skin contact may result in drying, scaling dermatitis, or development of secondary skin infections. The chief target organ is the hematopoietic system. Bleeding from the nose, gums, or mucous membranes and the development of purpuric spots, pancytopenia, leukopenia, thrombocytopenia, aplastic anemia, and leukemia may occur as the condition progresses. The bone marrow may appear normal, aplastic or hyperplastic, and may not correlate with peripheral blood-forming tissues. The onset of effects of prolonged benzene exposure may be delayed for many months or years after the actual exposure has ceased., Blood disorders

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption of large quantities:

narcosis  
respiratory arrest  
Convulsions

Possible damages:

Damage to:

Liver  
Kidney  
Central nervous system

Handle in accordance with good industrial hygiene and safety practice.



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## SECTION 12: Ecological information

### 12.1 Toxicity

#### **Components:**

#### **benzene:**

Toxicity to fish : LC50 (*Oryzias latipes* (Orange-red killifish)): > 100 mg/l

End point: mortality  
Exposure time: 96 h  
Test Type: semi-static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 1.000 mg/l

End point: Immobilization  
Exposure time: 48 h  
Test Type: semi-static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes

NOEC (*Daphnia magna* (Water flea)): > 1.000 mg/l  
End point: Immobilization  
Exposure time: 48 h  
Test Type: semi-static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 1.000 mg/l

Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

NOEC (*Pseudokirchneriella subcapitata* (green algae)): >= 1.000 mg/l  
Exposure time: 72 h  
Test Type: static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 201  
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l

Exposure time: 3 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes



Toxicity to fish (Chronic toxicity) : NOEC: 0,8 mg/l  
Exposure time: 32 d  
Species: Pimephales promelas (fathead minnow)  
Test Type: flow-through test  
Analytical monitoring: yes  
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LC50: > 100 mg/l  
End point: mortality  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Analytical monitoring: yes  
Method: OECD Test Guideline 211  
GLP: yes

### **Ecotoxicology Assessment**

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

## **12.2 Persistence and degradability**

### **Components:**

#### **benzene:**

Biodegradability : Test Type: aerobic  
Inoculum: activated sludge, non-adapted  
Concentration: 17 mg/l  
Result: Readily biodegradable.  
Biodegradation: 96 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
GLP: yes

## **12.3 Bioaccumulative potential**

### **Components:**

#### **benzene:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)  
Exposure time: 3 d  
Concentration: 0,05 mg/l  
Bioconcentration factor (BCF): 10

Partition coefficient: n-octanol/water : log Pow: 2,13 (25 °C)  
pH: 7  
Remarks: Bioaccumulation is not expected.  
(ECHA)

## **12.4 Mobility in soil**

No data available



## 12.5 Results of PBT and vPvB assessment

### **Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Endocrine disrupting properties

### **Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

No data available

## 12.7 Other adverse effects

### **Components:**

#### **benzene:**

Additional ecological information : Endangers drinking-water supplies if allowed to enter soil or water.

Discharge into the environment must be avoided.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

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

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## SECTION 14: Transport information

### 14.1 UN number or ID number

**ADR** : UN 1114

**IMDG** : UN 1114

**IATA** : UN 1114

### 14.2 UN proper shipping name

**ADR** : BENZENE

**IMDG** : BENZENE



**IATA** : Benzene

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADR</b>	: 3	
<b>IMDG</b>	: 3	
<b>IATA</b>	: 3	

### 14.4 Packing group

**ADR**  
Packing group : II  
Classification Code : F1  
Hazard Identification Number : 33  
Labels : 3  
Tunnel restriction code : (D/E)

**IMDG**  
Packing group : II  
Labels : 3  
EmS Code : F-E, S-D

#### **IATA (Cargo)**

Packing instruction (cargo aircraft) : 364  
Packing instruction (LQ) : Y341  
Packing group : II  
Labels : Class 3 - Flammable liquids

#### **IATA\_P (Passenger)**

Packing instruction (passenger aircraft) : 353  
Packing instruction (LQ) : Y341  
Packing group : II  
Labels : Class 3 - Flammable liquids

### 14.5 Environmental hazards

**ADR**  
Environmentally hazardous : no

**IMDG**  
Marine pollutant : no

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.



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## SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3  Number on list 5: benzene  Number on list 28: benzene  Number on list 29: benzene  Number on list 40  Number on list 72: benzene  Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EU) No 2024/590 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable
Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	P5c	FLAMMABLE LIQUIDS

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American

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The life science business of Merck operates as MilliporeSigma in the US and Canada



Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Other information : The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. 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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