

# SAFETY DATA SHEET

Version 6.3  
Revision Date 04/18/2021  
Print Date 08/29/2021

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

### 1.1 Product identifiers

Product name : Ethylbenzene  
Product Number : 296848  
Brand : Sigma-Aldrich  
Index-No. : 601-023-00-4  
CAS-No. : 100-41-4

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

Identified uses : Laboratory chemicals, Synthesis of substances

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

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES  
Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225  
Acute toxicity, Inhalation (Category 4), H332  
Carcinogenicity (Category 2), H351  
Specific target organ toxicity - repeated exposure (Category 2), hearing organs, H373  
Aspiration hazard (Category 1), H304  
Short-term (acute) aquatic hazard (Category 2), H401  
Long-term (chronic) aquatic hazard (Category 3), H412

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

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapor.  
H304 May be fatal if swallowed and enters airways.  
H332 Harmful if inhaled.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs (hearing organs) through prolonged or repeated exposure.  
H401 Toxic to aquatic life.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P331 Do NOT induce vomiting.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
P501 Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Formula : C<sub>8</sub>H<sub>10</sub>  
Molecular weight : 106.17 g/mol  
CAS-No. : 100-41-4  
EC-No. : 202-849-4

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Component	Classification	Concentration
<b>ethylbenzene</b>		
	Flam. Liq. 2; Acute Tox. 4; Carc. 2; STOT RE 2; Asp. Tox. 1; Aquatic Acute 2; Aquatic Chronic 3; H225, H332, H351, H373, H304, H401, H412	<= 100 %

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

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#### SECTION 4: First aid measures

##### 4.1 Description of first-aid measures

No data available

##### 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

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

###### Unsuitable extinguishing media

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

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

Carbon oxides

Combustible.

##### 5.3 Advice for firefighters

No data available

##### 5.4 Further information

No data available

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#### SECTION 6: Accidental release measures

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

For personal protection see section 8.

##### 6.2 Environmental precautions

No data available

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

No data available

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

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

hygroscopic

Storage class (TRGS 510): 3: Flammable liquids

### 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

#### Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
ethylbenzene	100-41-4	TWA	100 ppm 435 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	100 ppm 435 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	125 ppm 545 mg/m <sup>3</sup>	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		PEL	5 ppm 22 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		STEL	30 ppm 130 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

#### Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	0.15g/g creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

## 8.2 Exposure controls

### Personal protective equipment

#### Skin protection

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

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

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

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 10 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

#### 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.

#### Control of environmental exposure

Prevent product from entering drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |  |   |
|--|---|
| a) Appearance                              | Form: liquid<br>Color: colorless                                      |
| b) Odor                                    | aromatic  |
| c) Odor Threshold                          | No data available   |
| d) pH                                      | No data available   |
| e) Melting point/freezing point            | -94.9 °C (-138.8 °F) at 101.3 hPa - (ECHA)                            |
| f) Initial boiling point and boiling range | 136.1 °C 277.0 °F at 1,013.3 hPa                                      |
| g) Flash point                             | 23 °C (73 °F) - closed cup - Regulation (EC) No. 440/2008, Annex, A.9 |
| h) Evaporation rate                        | No data available   |
| i) Flammability (solid,                    | No data available   |

gas)	
j) Upper/lower flammability or explosive limits	Upper explosion limit: 6.7 %(V) Lower explosion limit: 1 %(V)
k) Vapor pressure	9.52 hPa at 20 °C (68 °F) - OECD Test Guideline 104
l) Vapor density	No data available
m) Relative density	0.86 - 0.87 at 20 °C (68 °F)
n) Water solubility	0.2 g/l at 25 °C (77 °F) - Regulation (EC) No. 440/2008, Annex, A.6 - slightly soluble
o) Partition coefficient: n-octanol/water	Pow: 4,170; log Pow: 3.6 at 20 °C (68 °F) - Regulation (EC) No. 440/2008, Annex, A.8
p) Autoignition temperature	430 °C (806 °F) at 1,013 hPa
q) Decomposition temperature	No data available
r) Viscosity	0.773 mm <sup>2</sup> /s at 20 °C (68 °F) - OECD Test Guideline 114 -
s) Explosive properties	No data available
t) Oxidizing properties	No data available

## 9.2 Other safety information

Surface tension	71.2 mN/m at 23 °C (73 °F)
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:  
Strong oxidizing agents

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

rubber, various plastics

### 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 and female - 3,500 mg/kg

Remarks: (ECHA)

LC50 Inhalation - Rat - male - 4 h - 17.8 mg/l

Remarks: (ECHA)

LD50 Dermal - Rabbit - 15,433 mg/kg

Remarks: (RTECS)

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Moderate skin irritation - 24 h

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritation

Remarks: (ECHA)

#### Respiratory or skin sensitization

Patch test: - Human

Result: negative

Remarks:

(IUCLID)

#### Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test):

Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Hamster

Test system: ovary

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)

Species: Mouse

Application Route: Inhalation

Method: OECD Test Guideline 474

Result: negative

### **Carcinogenicity**

IARC: 2B - Group 2B: Possibly carcinogenic to humans (ethylbenzene)

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

### **Reproductive toxicity**

No data available

### **Specific target organ toxicity - single exposure**

No data available

### **Specific target organ toxicity - repeated exposure**

May cause damage to organs through prolonged or repeated exposure. - hearing organs

### **Aspiration hazard**

May be fatal if swallowed and enters airways.

## **11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 90 d - NOAEL (No observed adverse effect level) - 75 mg/kg - LOAEL (Lowest observed adverse effect level) - 250 mg/kg  
RTECS: DA0700000

Central nervous system depression, Nausea, Headache, Vomiting, Ataxia., Tremors  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Systemic effects:

CNS disorders  
Tiredness  
Drowsiness  
Dizziness  
Convulsions  
Headache  
narcosis

Handle in accordance with good industrial hygiene and safety practice.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

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Toxicity to fish	semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 4.2 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 1.8 - 2.4 mg/l - 48 h (US-EPA)
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata (green algae) - 3.6 mg/l - 96 h (US-EPA)
Toxicity to bacteria	EC50 - Photobacterium phosphoreum - 9.68 mg/l - 30 min Remarks: (IUCLID)

## 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d  
Result: ca.79 % - Readily biodegradable.  
(ISO 14593)

## 12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

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

## 12.6 Other adverse effects

No data available

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### DOT (US)

UN number: 1175 Class: 3 Packing group: II  
Proper shipping name: Ethylbenzene  
Reportable Quantity (RQ): 1000 lbs  
Poison Inhalation Hazard: No

### IMDG

UN number: 1175 Class: 3 Packing group: II EMS-No: F-E, S-D  
Proper shipping name: ETHYLBENZENE

### IATA

UN number: 1175 Class: 3 Packing group: II  
Proper shipping name: Ethylbenzene

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**SECTION 15: Regulatory information****SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
ethylbenzene	100-41-4	2007-07-01

**SARA 311/312 Hazards**

Fire Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

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**SECTION 16: Other information**

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact [mlsbranding@sial.com](mailto:mlsbranding@sial.com).

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