

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

<b>Trade name</b>	<b>Ethylbenzene</b>
<b>Stock number:</b>	L05908, A14542
<b>CAS Number:</b>	100-41-4
<b>EC number:</b>	202-849-4
<b>Index number:</b>	601-023-00-4

**1.2 Relevant identified uses of the substance**

<b>or mixture and uses advised against.</b>	No further relevant information available.
<b>Identified use:</b>	SU24 Scientific research and development

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

<b>Manufacturer/Supplier:</b>	Alfa Aesar GmbH & Co.KG A Johnson Matthey Company Zeppelinstr. 7b 76185 Karlsruhe / Germany Tel: +49 (0) 721 84007 280 Fax: +49 (0) 721 84007 300 Email: tech@alfa.com www.alfa.com
<b>Informing department:</b>	Product safety Tel + +049 (0) 7275 988687-0
<b>1.4 Emergency telephone number:</b>	Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number) Poison Information Center Mainz www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

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

GHS02 flame

Flam. Liq. 2, H225 Highly flammable liquid and vapour.



GHS07

Acute Tox. 4, H332 Harmful if inhaled.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xn; Harmful

R20: Harmful by inhalation.



F; Highly flammable

R11: Highly flammable.

**Information concerning particular hazards for human and environment:****Other hazards that do not result in classification**

Not applicable

No information known.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008****Hazard pictograms****Signal word****Hazard statements****Precautionary statements**

The substance is classified and labelled according to the CLP regulation.

GHS02, GHS07

Danger

H225 Highly flammable liquid and vapour.

H332 Harmful if inhaled.

P210

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

P241

Use explosion-proof electrical/ventilating/lighting/equipment.

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P403+P235

Store in a well-ventilated place. Keep cool.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

**2.3 Other hazards****Results of PBT and vPvB assessment****PBT:**

Not applicable.

**vPvB:**

Not applicable.

**SECTION 3: Composition/information on ingredients****3.1 Substances****CAS# Designation:**

100-41-4 Ethylbenzene

**Identification number(s):****EC number:**

202-849-4

**Index number:**

601-023-00-4

**SECTION 4: First aid measures****4.1 Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

**After skin contact**

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

**After eye contact**

Seek immediate medical advice.

**After swallowing**

Rinse opened eye for several minutes under running water. Then consult doctor.

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

Seek medical treatment.

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

No further relevant information available.

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents**

CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

**5.3 Advice for firefighters****Protective equipment:**

Wear self-contained breathing apparatus.

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Wear full protective suit.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation**6.2 Environmental precautions:**Keep away from ignition sources  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.**6.3 Methods and material for containment and cleaning up:**Keep away from ignition sources.  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose of contaminated material as waste according to item 13.  
Ensure adequate ventilation.**Prevention of secondary hazards:****6.4 Reference to other sections**Keep away from ignition sources.  
See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.**SECTION 7: Handling and storage****7.1 Precautions for safe handling**Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.**Information about protection against explosions and fires:**Protect against electrostatic charges.  
Fumes can combine with air to form an explosive mixture.**7.2 Conditions for safe storage, including any incompatibilities****Storage Requirements to be met by storerooms and containers:**

Store in cool location.

**Information about storage in one common storage facility:**

No information known.

**Further information about storage conditions:**Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.**7.3 Specific end use(s)**

No further relevant information available.

**SECTION 8: Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**8.1 Control parameters****Components with critical values that require monitoring at the workplace:****100-41-4 Ethylbenzene (100,0%)**

AGW (Germany)	88 mg/m <sup>3</sup> , 20 ppm 2(II);DFG, H, Y
PEL (USA)	435 mg/m <sup>3</sup> , 100 ppm
REL (USA)	Short-term value: 545 mg/m <sup>3</sup> , 125 ppm Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
TLV (USA)	Short-term value: 543 mg/m <sup>3</sup> , 125 ppm Long-term value: 87 mg/m <sup>3</sup> , 20 ppm BEI

**Ingredients with biological limit values:****100-41-4 Ethylbenzene (100,0%)**

BGW (Germany)	1 mg/l B b Ethylbenzol
	800 mg/g Kreatinin U b Mandelsäure plus Phenoxyglyxylsäure
BEI (USA)	0,7 g/g creatinine urine end of shift at end of workweek Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)
	- end-exhaled air not critical Ethyl benzene (semi-quantitative)

**Additional information:**

No data

**8.2 Exposure controls****Personal protective equipment****General protective and hygienic measures**The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Maintain an ergonomically appropriate working environment.**Breathing equipment:****Protection of hands:**Use breathing protection with high concentrations.  
Check protective gloves prior to each use for their proper condition.  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.**Material of gloves****Penetration time of glove material****Eye protection:**

Impervious gloves

Not determined

Safety glasses

Face protection

**Body protection:**

Protective work clothing.

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

**Form:** Liquid  
**Colour:** Colourless  
**Smell:** Aromatic  
**Odour threshold:** Not determined.

**pH-value:** Not determined.

**Change in condition**

**Melting point/Melting range:** -95 °C  
**Boiling point/Boiling range:** 136 °C  
**Sublimation temperature / start:** Not determined

**Flash point:** 22 °C  
**Inflammability (solid, gaseous):** Not applicable.  
**Ignition temperature:** 431 °C  
**Decomposition temperature:** Not determined  
**Self-inflammability:** Not determined.  
**Critical values for explosion:**  
**Lower:** 1,1 Vol %  
**Upper:** 6,8 Vol %  
**Steam pressure:** Not determined  
**Density at 20 °C:** 0,867 g/cm<sup>3</sup>  
**Relative density:** Not determined.  
**Vapour density:** Not determined.  
**Evaporation rate:** Not determined.  
**Solubility in / Miscibility with**  
**Water:** Slightly soluble  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**dynamic:** Not determined.  
**kinematic:** Not determined.  
**9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** No information known.  
**10.2 Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.  
**10.3 Possibility of hazardous reactions** No dangerous reactions known  
**10.5 Incompatible materials:** Oxidizing agents  
 No information known.  
**10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

**Acute toxicity:** Harmful if inhaled.

**LD/LC50 values that are relevant for classification:**

Oral	LD50	3500 mg/kg (rat)
Dermal	LD50	17800 mg/kg (rabbit)

**Skin irritation or corrosion:** Irritant for skin and mucous membranes.  
**Eye irritation or corrosion:** May cause irritation  
**Sensitization:** No sensitizing effect known.  
**Germ cell mutagenicity:** No effects known.  
**Carcinogenicity:** EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.  
**Reproductive toxicity:** No effects known.  
**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** No effects known.  
**Aspiration hazard:** No effects known.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**SECTION 12: Ecological information**

**12.1 Toxicity**  
**Aquatic toxicity:** No further relevant information available.  
**12.2 Persistence and degradability** No further relevant information available.  
**12.3 Bioaccumulative potential** No further relevant information available.  
**12.4 Mobility in soil** No further relevant information available.  
**Additional ecological information:**  
**General notes:** Do not allow material to be released to the environment without proper governmental permits.  
 Water hazard class 1 (Self-assessment): slightly hazardous for water.  
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.  
 Avoid transfer into the environment.  
**12.5 Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**  
**Recommendation** Hand over to disposers of hazardous waste.  
 Must be specially treated under adherence to official regulations.  
 Consult state, local or national regulations for proper disposal.  
**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

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according to 1907/2006/EC, Article 31



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**SECTION 14: Transport information**

UN-Number ADR, IMDG, IATA	UN1175
14.2 UN proper shipping name ADR IMDG, IATA	1175 ETHYLBENZENE ETHYLBENZENE
14.3 Transport hazard class(es) ADR	
	
Class Label IMDG, IATA	3 (F1) Flammable liquids. 3
	
Class Label	3 Flammable liquids. 3
Packing group ADR, IMDG, IATA	II
14.5 Environmental hazards:	Not applicable.
14.6 Special precautions for user Kemler Number:	Warning: Flammable liquids. 33
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
<b>Transport/Additional information:</b>	
ADR Excepted quantities (EQ): Limited quantities (LQ) Transport category Tunnel restriction code	E2 1L 2 D/E
UN "Model Regulation":	UN1175, ETHYLBENZENE, 3, II

**SECTION 15: Regulatory information**

<b>15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
Australian Inventory of Chemical Substances	Substance is listed.
Standard for the Uniform Scheduling of Drugs and Poisons	Substance is not listed.
National regulations	
Information about limitation of use:	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
Water hazard class:	Water hazard class 1 (Self-assessment): slightly hazardous for water.
Other regulations, limitations and prohibitive regulations	
ELINCS (European List of Notified Chemical Substances)	Substance is not listed.
Substances of very high concern (SVHC) according to REACH, Article 57	Substance is not listed.
REACH - Pre-registered substances	Substance is listed.
15.2 Chemical safety assessment:	A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing data specification sheet:** Health, Safety and Environmental Department.

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 ICAO: International Civil Aviation Organization  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent

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