

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Ethylbenzene for analysis

Revision date: 26.07.2023

Product code: 25228

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

1.1. Product identifier

Ethylbenzene for analysis

REACH Registration Number: 01-2119489370-35-XXXX
CAS No: 100-41-4
Index No: 601-023-00-4
EC No: 202-849-4

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

Use of the substance/mixture

Laboratory chemical

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

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

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH
Street: Stempelstraße 6
Place: D-47167 Duisburg
Telephone: 0203/5194-0
E-mail: info@analytichem.de
Contact person: Abteilung Produktsicherheit
E-mail: produktsicherheit@analytichem.de
Internet: www.analytichem.de
Responsible Department: Abteilung Produktsicherheit
Telefax: 0203/5194-290
Telephone: 0203/5194-107/117

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

No data available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Flam. Liq. 2; H225
Acute Tox. 4; H332
Skin Irrit. 2; H315
Eye Irrit. 2; H319
STOT SE 3; H335
STOT RE 2; H373
Asp. Tox. 1; H304
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Signal word: Danger

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Pictograms:



Hazard statements

- H225 Highly flammable liquid and vapour.
- H332 Harmful if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H373 May cause damage to organs (ears) 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

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P260 Do not breathe dust/fume/gas/mist/vapours/spray.
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P331 Do NOT induce vomiting.
- P403+P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Sum formula: C₆H₅C₂H₅
Molecular weight: 106,16 g/mol

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
100-41-4	ethylbenzene			100 %
	202-849-4	601-023-00-4	01-2119489370-35-XXXX	
	Flam. Liq. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 2, Asp. Tox. 1, Aquatic Chronic 3; H225 H332 H315 H319 H335 H373 H304 H412			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
100-41-4	202-849-4	ethylbenzene	100 %
	inhalation: ATE = 11 mg/l (vapours); inhalation: ATE = 1,5 mg/l (dusts or mists); oral: LD50 = ca. 3500 mg/kg		

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures

4.1. Description of first aid measures

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General information

No data available

After inhalation

Provide fresh air.

If breathing is irregular or stopped, administer artificial respiration.

Call a physician immediately.

After contact with skin

Wash immediately with: Water

Take off immediately all contaminated clothing and wash it before reuse.

Call a physician immediately.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Remove contact lenses, if present and easy to do. Continue rinsing.

After ingestion

Observe risk of aspiration if vomiting occurs.

Call a physician immediately.

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

Irritant

Dizziness

Dizziness

Gastrointestinal complaints

Vomiting

Headache

Spasms

Dizziness

The product causes narcotic-like effects.

Inebriation

Has degreasing effect on the skin.

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

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet, Carbon dioxide (CO₂), Foam, Extinguishing powder.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible liquid.

Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Hazardous combustion products In case of fire may be liberated: Carbon dioxide (CO₂) Carbon monoxide

Beware of reignition.

5.3. Advice for firefighters

Remove persons to safety. Do not inhale explosion and combustion gases.

Avoid contact with skin, eyes and clothes.

In case of fire: Wear self-contained breathing apparatus.

Use water spray jet to protect personnel and to cool endangered containers.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Suppress gases/vapours/mists with water spray jet.

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Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General advice

Keep away from sources of ignition - No smoking.

This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe).

Take action to prevent static discharges.

For non-emergency personnel

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

6.3. Methods and material for containment and cleaning up

For containment

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Keep container tightly closed.

Use personal protection equipment. Use extractor hood (laboratory).

Do not breathe gas/fumes/vapour/spray. Provide adequate ventilation.

Advice on protection against fire and explosion

Take action to prevent static discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

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Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

Take off immediately all contaminated clothing and wash it before reuse.
If handled uncovered, arrangements with local exhaust ventilation have to be used.
Draw up and observe skin protection programme.
Wash hands and face before breaks and after work and take a shower if necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed and dry.

Hints on joint storage

Do not store together with: Oxidising agent. Pyrophoric or self-heating substances.

Further information on storage conditions

Vapours may form explosive mixtures with air.
storage temperature < 30°C

7.3. Specific end use(s)

Laboratory use Laboratory chemical

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
100-41-4	Ethylbenzene	100	442		TWA (8 h)	
		200	884		STEL (15 min)	

Biological limit values

CAS No	Substance	Parameter	Value	Test material	Sampling time
100-41-4	Ethyl benzene	Mandelic acid and phenylglyoxylic acid	0.7 g/g	Creatinine	End of shift at end of workweek

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
100-41-4	ethylbenzene			
Worker DNEL, long-term		inhalation	systemic	77 mg/m ³
Worker DNEL, acute		inhalation	local	293 mg/m ³
Worker DNEL, long-term		dermal	systemic	180 mg/kg bw/day
Consumer DNEL, long-term		inhalation	systemic	15 mg/m ³
Consumer DNEL, long-term		oral	systemic	1,6 mg/kg bw/day

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PNEC values

CAS No	Substance	
Environmental compartment		Value
100-41-4	ethylbenzene	
Freshwater		0,1 mg/l
Freshwater (intermittent releases)		0,1 mg/l
Marine water		0,01 mg/l
Freshwater sediment		13,7 mg/kg
Marine sediment		1,37 mg/kg
Secondary poisoning		20 mg/kg
Micro-organisms in sewage treatment plants (STP)		9,6 mg/l
Soil		2,68 mg/kg

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Individual protection measures, such as personal protective equipment

Eye/face protection

Suitable eye protection: goggles.

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation KCL 890 Vitoject®

Suitable material: FKM (fluoro rubber) 0,7 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation KCL 730 Camatril® Velours

Suitable material: NBR (Nitrile rubber) 0,4 mm

Wearing time with occasional contact (splashes): > 10 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. 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).

Skin protection

Flame-retardant protective clothing. Wear anti-static footwear and clothing

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Filtering device with filter or ventilator filtering device of type: A

Environmental exposure controls

The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration.

Danger of explosion

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	colourless
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	-95 °C
Boiling point or initial boiling point and boiling range:	136 °C
Flammability:	not applicable
Lower explosion limits:	1 vol. %
Upper explosion limits:	7,8 vol. %
Flash point:	15 °C
Auto-ignition temperature:	430 °C
Decomposition temperature:	not determined
pH-Value:	No data available
Viscosity / kinematic: (at 40 °C)	0,63 mm ² /s
Water solubility: (at 20 °C)	0,2 g/L
Solubility in other solvents	not determined
Dissolution rate:	No data available
Partition coefficient n-octanol/water:	log Pow: 3,15 (25 °C)
Dispersion stability:	No data available
Vapour pressure: (at 20 °C)	9,52 hPa
Vapour pressure:	No data available
Density:	0,87 g/cm ³
Relative density:	No data available
Bulk density:	No data available
Relative vapour density:	not determined
Particle characteristics:	No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties	
Vapours can form explosive mixtures with air.	
Sustaining combustion:	Sustaining combustion
Self-ignition temperature	
Solid:	not applicable
Gas:	not applicable
Oxidizing properties	
Not oxidising.	

Other safety characteristics

Evaporation rate:	not determined
Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	not determined
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available

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No data available:

Viscosity / dynamic:
(at 20 °C)

0,68 mPa·s

Flow time:

No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable.

Vapours can form explosive mixtures with air.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Oxidising agent

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

plastic

Rubber articles

10.6. Hazardous decomposition products

Hazardous combustion products

In case of fire may be liberated: Carbon dioxide (CO₂) Carbon monoxide

Further information

No data available

SECTION 11: Toxicological information

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

Toxicokinetics, metabolism and distribution

No data available

Acute toxicity

Harmful if inhaled.

CAS No	Chemical name					
	Exposure route	Dose	Species	Source	Method	
100-41-4	ethylbenzene					
	oral	LD50 mg/kg	ca. 3500	Rat	AMA Arch. Ind. Health. 14:387-398. (1956)	No guideline available
	inhalation vapour	ATE	11 mg/l			
	inhalation dust/mist	ATE	1,5 mg/l			

Irritation and corrosivity

Causes skin irritation.

Causes serious eye irritation.

Irritation to respiratory tract

Sensitising effects

Based on available data, the classification criteria are not met.

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Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (ethylbenzene)

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (ethylbenzene)

Aspiration hazard

May be fatal if swallowed and enters airways.

Information on likely routes of exposure

No data available

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards

Endocrine disrupting properties

No data available

Other information

Irritant

Dizziness

Dizziness

Gastrointestinal complaints

Vomiting

Headache

Spasms

Dizziness

The product causes narcotic-like effects.

Inebriation

Has degreasing effect on the skin.

Further information

Prolonged or repeated skin contact may cause removal of natural fat from the skin resulting in dermatitis (skin inflammation).

SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
100-41-4	ethylbenzene					
	Acute fish toxicity	LC50	4,2 mg/l	96 h	Oncorhynchus mykiss	Ecotoxicol. Environ. Saf. 16:158-169 (19)
	Acute algae toxicity	ErC50	4,6 mg/l	72 h	Pseudokirchneriella subcapitata	Chemosphere 10(10): 1123-1126 (1981)
	Acute crustacea toxicity	EC50 mg/l	1,8 - 2,4	48 h	Daphnia magna	Water Res. 27:903-909 (1993)
	Acute bacteria toxicity	(EC50 mg/l)	ca. 600	0,5 h	activated sludge, domestic	Study report (1988)
						other: According to EPA method F
						OECD Guideline 203
						OECD Guideline 201
						OECD Guideline 209

12.2. Persistence and degradability

81 - 100 %; 14 d; aerob
OECD-302C

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
100-41-4	ethylbenzene	3,6

BCF

CAS No	Chemical name	BCF	Species	Source
100-41-4	ethylbenzene	1	Oncorhynchus kisutch	Arch. Environ. Conta

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Do not empty into drains.

Further information

Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Send to a hazardous waste incinerator facility under observation of official regulations.
Do not empty into drains.

Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

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Land transport (ADR/RID)

14.1. UN number or ID number:	UN 1175
14.2. UN proper shipping name:	ETHYLBENZENE
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Classification code:	F1
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	33
Tunnel restriction code:	D/E

Inland waterways transport (ADN)

14.1. UN number or ID number:	UN 1175
14.2. UN proper shipping name:	ETHYLBENZENE
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Classification code:	F1
Limited quantity:	1 L
Excepted quantity:	E2

Marine transport (IMDG)

14.1. UN number or ID number:	UN 1175
14.2. UN proper shipping name:	ETHYLBENZENE
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Special Provisions:	-
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-E, S-D

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number:	UN 1175
14.2. UN proper shipping name:	ETHYLBENZENE
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
Hazard label:	3
Limited quantity Passenger:	1 L
Passenger LQ:	Y341
Excepted quantity:	E2
IATA-packing instructions - Passenger:	353
IATA-max. quantity - Passenger:	5 L
IATA-packing instructions - Cargo:	364
IATA-max. quantity - Cargo:	60 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: Combustible liquid.

14.7. Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information

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

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 40

Information according to 2012/18/EU (SEVESO III): P5c FLAMMABLE LIQUIDS

National regulatory information

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D):

1 - slightly hazardous to water

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 9,12.

Abbreviations and acronyms

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

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Flam. Liq: Flammable liquid

Acute Tox: Acute toxicity

Asp. Tox: Aspiration hazard

Skin Irrit: Skin irritation

Eye Irrit: Eye irritation

STOT SE: Specific target organ toxicity - single exposure

STOT RE: Specific target organ toxicity - repeated exposure

Aquatic Chronic: Chronic aquatic hazard

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs (ears) through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of

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processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.