

# Safety data sheet

**MERCK**

According to EC Directive 91/155/EEC  
09.2000 from CD-ROM 2000/2 Date of issue: 05.07.2000 Supersedes edition of 30.09.1999

## 1. Identification of the substance/preparation and of the company/undertaking

### Identification of the product

Catalogue No.: 100971  
Product name: Ethanol 96% extra pure Ph.Eur.,BP

### Manufacturer/supplier identification

Company: Merck KGaA \* 64271 Darmstadt \* Germany \* Tel: +49 (0)6151 72-2440  
Emergency telephone No.: Please contact the regional Merck representation in your country.

## 2. Composition/information on ingredients

### Synonyms

Ethyl alcohol

CAS-No.:	64-17-5	EC-Index-No.:	603-002-00-5
Molar mass:	46,07	EC-No.:	200-578-6
Molecular formula:	C <sub>2</sub> H <sub>6</sub> O		

## 3. Hazards identification

Highly flammable.

## 4. First aid measures

After inhalation: fresh air.  
After skin contact: wash off with plenty of water. Remove contaminated clothing.  
After eye contact: rinse out with plenty of water with the eyelid held wide open. Summon eye specialist if necessary.  
After swallowing: immediately make victim drink plenty of water. Consult doctor if feeling unwell.

## 5. Fire-fighting measures

Suitable extinguishing media:  
CO<sub>2</sub>, foam, powder.

Special risks:  
Combustible. Vapours heavier than air. Forms explosive mixtures with air at ambient temperatures. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:  
Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Other information:  
Cool container with spray water from a safe distance. Contain escaping vapours with water. Prevent fire-fighting water from entering surface water or groundwater. Keep away sources of ignition.

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### 6. Accidental release measures

**Person-related precautionary measures:**

Do not inhale vapours/aerosols. Ensure supply of fresh air in enclosed rooms.

**Environmental-protection measures:**

Do not allow to enter sewerage system; risk of explosion!

**Procedures for cleaning / absorption:**

Take up with liquid-absorbent material (e.g. Chemizorb®). Forward for disposal. Clean up affected area.

### 7. Handling and storage

**Handling:**

Take measures to prevent electrostatic charging. Keep away from sources of ignition.

**Storage:**

Tightly closed. In a well-ventilated place. Keep away from sources of ignition and heat. At +15°C to +25°C.

### 8. Exposure controls/personal protection

**Specific control parameter**

**German regulations**

**MAK Germany (max. workplace conc.)**

Name	Ethanol
Value	300 ml/m <sup>3</sup>
	960 mg/m <sup>3</sup>
Peak limit	II,1 reocursive substance, class 2
Carcinogenic	cat. 5 no risk expected if TLV value is observed
Embryotoxic	cat. C no risk expected by maintaining TLV
Mutagenic	cat. 2 mutagenic effect in mammals

**Personal protective equipment:**

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

**Respiratory protection:** required when vapours/aerosols are generated. Filter A (acc. to DIN 3131) for vapours of organic compounds

**Eye protection:** required

**Hand protection:** required

**Industrial hygiene:**

Change contaminated clothing. Application of skin-protective barrier cream recommended. Wash hands after working with substance.

### 9. Physical and chemical properties

Form: liquid  
 Colour: colourless  
 Odour: alcohol-like

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pH value			
at 10 g/l H <sub>2</sub> O	(20 °C)	7.0	
Viscosity dynamic	(20 °C)	1.2	mPa*s
Melting point		-117	°C
Boiling point		78	°C
Ignition temperature		425	°C
Flash point		17	°C
Explosion limits	lower	3.5	Vol%
	upper	15	Vol%
Vapour pressure	(20 °C)	~ 59	hPa
Relative vapour density		not available	
Density	(20 °C)	0.81	g/cm <sup>3</sup>
Solubility in			
water	(20 °C)	soluble	
log P(oct):		-0.32	
Bioconcentration factor		0.66	

**10. Stability and reactivity***Conditions to be avoided*

Heating.

*Substances to be avoided*

alkali metals, alkaline earth metals, alkali oxides, strong oxidizing agents.

*Hazardous decomposition products*

no information available

*Further information*

highly inflammable;

unsuitable working materials: various plastics, rubber;

Explosible with air in a vaporous/gaseous state.

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**12. Ecological information****Abiotic degradation:**

Rapid degradation.

**Biologic degradation:**

Biodegradation: 94 % modified OECD screening test;

Behavior in environmental compartments:

Distribution: log P(oct): -0.32;

No bioaccumulation is to be expected (log P(o/w) &lt; 1).

**Ecotoxic effects:**

Biological effects: In high concentrations: Harmful effect on aquatic organisms. When used properly, no impairments in the function of waste-water-treatment plants are to be expected.

Fish toxicity: *L. idus* LC<sub>50</sub>: 8140 mg/l / 48 h (anhydrous substance);

Daphnia toxicity:

*Daphnia magna* EC<sub>50</sub>: 9268-14221 mg/l / 48 h (anhydrous substance);

Maximum permissible toxic concentration:

Algal toxicity: *Sc. quadricauda* IC<sub>50</sub>: 5000 mg/l / 7 d (anhydrous substance); Bacterial toxicity:*Pa. putida* EC<sub>50</sub>: 6500 mg/l / 16 h (anhydrous substance); Protozoa: *E. salicatum* EC<sub>50</sub>: 65 mg/l / 72 h (anhydrous substance).**Further ecologic data:**

BOD: 0.93-1.67 g/g (anhydrous substance); COD: 1.99 g/g (anhydrous substance); ThOD: 2.10 g/g (anhydrous substance);

BOD 74 % of ThOD / 5 d (anhydrous substance); COD 90 % of ThOD (anhydrous substance);

No ecological problems are to be expected when the product is handled and used with due care and attention.

**13. Disposal considerations****Product:**

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of this latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

**Packaging:**

Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

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Land transport	GGVS, GGVE, ADR, RID
Classification	3/3b
Name	1170 ETHANOL(ETHYLALKOHOL)
River transport	ADN, ADNR
Classification	not tested
Sea transport	IMDG, GGVSee
Classification	3.2/UN 1170/PG II
EmS	3-06
MFAG	305
Name	ETHANOL
Air transport	ICAO, IATA
Classification	3/UN 1170/PG II
Name	ETHANOL

The transport regulations are cited according to international regulations and in the form applicable in Germany (GGVS/GGVE). Possible national deviations in other countries are not considered.

**15. Regulatory information***Labelling according to EC Directives*

Symbol:	F	Highly flammable
R-phrases:	11	Highly flammable.
S-phrases:	7-16	Keep container tightly closed. Keep away from sources of ignition - No smoking.
EC-No.:	200-578-6	EC label

**16. Other information***Reason for alteration*

Change/addition in the chapter 5.  
Change in the chapter on ecology.  
General update.

*Regional representations*

This information is given on the authorised Safety Data Sheet for your country.

*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.*