

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

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**1 Identification of the substance/mixture and of the company/undertaking**

- **Product details**
- **Molecular formula:** C<sub>2</sub> H<sub>6</sub> O
- **Trade name:** Ethanol
- **Article number:** CH0044
- **Application of the substance / the preparation** Laboratory Reagent.
- **Manufacturer/Supplier:**

Carlo Erba Reagenti  
Strada Rivoltana Km 6/7  
I-20090 Rodano  
Tel.: 0039 02 953251

Carlo Erba Reactifs - SDS  
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- **Further information obtainable from:**  
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**2 Hazards identification**

- **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.

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



F+; Highly flammable

R11: Highly flammable.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for Substances of the EU", DIR. 67/548/EC, in the latest valid version.

- **Classification system:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for Substances of the EU", DIR. 67/548/EC, in the latest valid version.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms**



GHS02

- **Signal word** Danger

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- **Hazard-determining components of labelling:** Void
- **Hazard statements**  
H225 Highly flammable liquid and vapour.
- **Precautionary statements**  
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
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.

- **Labelling according to EU guidelines:**  
The product has been classified and marked in accordance to the calculation procedure of the "General Classification guideline for Substances of the EU", DIR. 67/548/EC, in the latest valid version.  
Observe the general safety regulations when handling chemicals.

- **Code letter and hazard designation of product:**



F Highly flammable

- **Risk phrases:**  
11 Highly flammable.
- **Safety phrases:**  
7 Keep container tightly closed.  
16 Keep away from sources of ignition - No smoking.

### 3 Composition/information on ingredients

- **Chemical characterization:**
- **CAS No. Description**  
Ethyl alcohol
- **Identification number(s)**
- **EINECS Number:** 200-578-6
- **Index number:** 603-002-00-5

### 4 First aid measures

- **General information:** Involve doctor immediately.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Flush skin with plenty of water for at least 15 minutes.  
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If some symptoms persist seek for medical advice.
- **Information for doctor:** Show your the doctor this Material Safety Data Sheets.

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## 5 Firefighting measures

**· General Information:**

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

**· Suitable extinguishing agents:** CO<sub>2</sub> or alcohol resistant foam.

**· For safety reasons unsuitable extinguishing agents:** Water with full jet.

**· Special hazards caused by the substance, its products of combustion or resulting gases:**

Carbon monoxide and carbon dioxide

**· Protective equipment:** No special measures required.

## 6 Accidental release measures

**· General Information:** Use proper personal protective equipment as indicated in Section 8.

**· Person-related safety precautions:**

Keep away any ignition source.

Wear protective equipment. Keep unprotected persons away.

If vapours / aerosols are formed, use personal protective equipment.

**· Measures for environmental protection:**

Dilute with plenty of water after collecting the liquid.

Prevent seepage into sewage system, workpits and cellars.

**· Measures for cleaning/collecting:**

Collect the liquid with vacuum in a suitable container and absorb the remainder with a porous material (diatomite, acid binders, universal binders, etc).

Ensure adequate ventilation.

**· Additional information:**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

**· Handling:**

**· Information for safe handling:**

Only handle and refill product in closed systems or under local exhaust.

Pneumatic conveyance only with nitrogen or other inert gases.

**· Information about fire - and explosion protection:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

**· Storage:**

**· Requirements to be met by storerooms and receptacles:**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

**· Information about storage in one common storage facility:** Store away from oxidizing agents.

## 8 Exposure controls/personal protection

**· Additional information about design of technical facilities:** No further data; see item 7.

**· Ingredients with limit values that require monitoring at the workplace:**

**Ethyl alcohol**

WEL (Great Britain)	Long-term value: 1920 mg/m <sup>3</sup> , 1000 ppm
PEL (USA)	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
REL (USA)	Long-term value: 1900 mg/m <sup>3</sup> , 1000 ppm
TLV (USA)	Short-term value: 1880 mg/m <sup>3</sup> , 1000 ppm

**· Additional information:** The lists valid during the making were used as basis.

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- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation  
The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.  
Rubber gloves
- **Material of gloves**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.  
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.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Chemical safety goggles.
- **Body protection:**  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

## 9 Physical and chemical properties

- **Molecular weight** 46 g
- **Appearance:**
  - **Form:** Fluid
  - **Colour:** Colourless
  - **Odour:** Alcohol-like
- **Change in condition**
  - **Melting point/Melting range:** -114.5°C
  - **Boiling point/Boiling range:** 78°C
  - **Flash point:** 13°C
  - **Ignition temperature:** 425°C
  - **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- **Explosion limits:**
  - **Lower:** 3.5 Vol %
  - **Upper:** 15 Vol %
- **Vapour pressure at 20°C:** 59 hPa
- **Density at 20°C:** 0.79 g/cm<sup>3</sup>
- **Solubility in / Miscibility with water at 20°C:** 1 g/l
- **organic solvents:** Miscible with many organic solvents.
- **Viscosity:**
  - **Dynamic at 20°C:** 1.2 mPas

## \* 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.

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- *Conditions to Avoid: Heat, flames and sparks.*
- **Materials to be avoided:**
- **Dangerous reactions** Can react violently with oxygen rich (oxidizing) material. Danger of Explosion.
- **Dangerous decomposition products:** Carbon monoxide, Carbon dioxide.

## 11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

Oral	LD50	7060 mg/kg (rat)
Inhalative	LC50/4 h	20000 mg/L (rat)

- **Primary irritant effect:**

- **on the skin:** No irritant effect.
- **on the eye:** No relevant irritating effects.
- **Ingestion:** It can be harmful if swallowed.
- **Inhalation:** May be harmful if inhaled.
- **Sensitization:** No sensitizing effects known.
- **Other information (about experimental toxicology):** No more relevant data available.

## 12 Ecological information

- **Information about elimination (persistence and degradability):**

- **Method**
- **Ecological information** Not available
- **Other information:** The product is easily biodegradable.
- **Ecotoxicological effects:**

- **Aquatic toxicity:**

LC50 aq. (96h)	1030 mg/L (fishes)
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- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

- **Product:**

- **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.  
Reutilise if possible or contact a waste processors for recycling or safe disposal.

- **Waste disposal key:**

The European Union does not establish uniform rules for the disposal of chemical waste, which are special waste. Their treatment and elimination of the domestic legislation of each country. So, in each case, you should contact the relevant authorities, or those companies legally authorized for elimination of waste.

2001/573/EC: Council Decision of 23 July 2001 amending the list of wastes contained in Decision 2000/532/EC.

Council Directive 91/156/EEC of 18 March 1991 amending Directive 75/442/EEC on waste.

- **Uncleaned packaging:**

The containers and packing materials contaminated with dangerous substances or preparations, have the same treatment products.

Directive 94/62/EC of the European Parliament and the Council of 20 December 1994 on packaging and packaging waste.

- **Recommendation:**

Disposal must be made according to official regulations.

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- Packagings that may not be cleansed are to be disposed of in the same manner as the product.
- Wash with solvents to be incinerated.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

**14 Transport information**

· **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 3 (F1) Flammable liquids.
- **Danger code (Kemler):** 33
- **UN-Number:** 1170
- **Packaging group:** II
- **Hazard label:** 3
- **Description of goods:** 1170 ETHANOL (ETHYL ALCOHOL)
- **Excepted quantities (EQ):** E2
- **Limited quantities (LQ):** LQ4
- **Transport category:** 2
- **Tunnel restriction code:** D/E

· **Maritime transport IMDG:**



- **IMDG Class:** 3
- **UN Number:** 1170
- **Label:** 3
- **Packaging group:** II
- **EMS Number:** F-E,S-D
- **Marine pollutant:** No
- **Proper shipping name:** ETHANOL (ETHYL ALCOHOL)

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 3
- **UN/ID Number:** 1170
- **Label:** 3
- **Packaging group:** II
- **Proper shipping name:** ETHANOL

· **UN "Model Regulation":** UN1170, ETHANOL (ETHYL ALCOHOL), 3, II

**15 Regulatory information**

- **Chemical safety assessment A** Chemical Safety Assessment has not been carried out.
- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
NK	100.0

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**Trade name: Ethanol**

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· **Waterhazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.

## \* 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** Q.A / Normative

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· **References**

ECDIN (Environmental Chem. Data and Information Network)

IUCLID (International Uniform Chemical Information Database)

NIOSH - Registry of Toxic Effects of Chemical Substances

Roth - Wassergefährdende Stoffe

Verschueren - Handbook of Environmental Data on Organic Chemicals

ChemDAT - Safety Data Sheets from E.Merck on CD-ROM

Merian - Metals and their compounds in the environment

· **Sources**

DIR. 67/548/EC, in the latest valid version.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006, REACH.

Regulation (EC) N° 1272/2008 of the European Parliament and of the Council of 16 December 2008, CLP, in the latest valid version.

Globally Harmonized System, GHS