

**Safety data sheet**  
**according to 1907/2006/EC, Article 31**

Printing date 19.02.2014

Version number 21

Revision: 19.02.2014

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

- **1.1 Product identifier**
- **Molecular formula:** C<sub>2</sub>H<sub>6</sub>O
- **Structure formula:** C H<sub>3</sub> - C H<sub>2</sub> - O H
- **Trade name:** Ethyl alcohol 96%
- **MSDS number:** CH0805
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Sector of Use**  
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites  
SU9 Manufacture of fine chemicals  
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)  
SU24 Scientific research and development
- **Product category**  
PC21 Laboratory chemicals  
PC19 Intermediate  
PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents  
PC29 Pharmaceuticals  
PC39 Cosmetics, personal care products  
PC40 Extraction agents
- **Process category**  
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC1 Use in closed process, no likelihood of exposure  
PROC2 Use in closed, continuous process with occasional controlled exposure  
PROC3 Use in closed batch process (synthesis or formulation)  
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC15 Use as laboratory reagent
- **Environmental release category**  
ERC1 Manufacture of substances  
ERC2 Formulation of preparations  
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles  
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
- **Application of the substance / the mixture** Chemical products for laboratory
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
CARLO ERBA REAGENTS  
Chaussée du Vexin  
Parc d'Affaires des Portes - BP616  
27106 VAL DE REUIL Cedex  
Téléphone: +02 32 09 20 00  
Télécopie: +02 32 09 20 20
- **Further information obtainable from:**  
Q.A / Normative  
email: MSDS\_CER-SDS@cer.dgroup.it
- **1.4 Emergency telephone number:**  
France (ORFILA 24h/24) - Tel : +33 (0)1 45 42 59 59  
Ireland - Tel : 00 353 1 8092568 - 00 353 1 8379964 (24h/24)  
EU Tel : 112

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### SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008

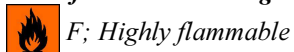


Flam. Liq. 2 H225 Highly flammable liquid and vapour.



Eye Irrit. 2 H319 Causes serious eye irritation.

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



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, and of the "General Classification guideline for Preparations of the EU", DIR. 99/45/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.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008

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

- Hazard pictograms



- Signal word Danger

- Hazard-determining components of labelling:

Ethyl alcohol

- Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

- Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P264 Wash thoroughly after handling.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P235 Store in a well-ventilated place. Keep cool.

- 2.3 Other hazards -

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- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

#### · 3.2 Chemical characterization: Mixtures

##### · **Description:**

Mixture made by the following substances:

Ethyl alcohol



F R11

50-100%



Flam. Liq. 2, H225; Eye Irrit. 2, H319

- **Dangerous components:** Void

### SECTION 4: First aid measures

#### · 4.1 Description of first aid measures

- **After inhalation:** Supply fresh air; consult a doctor in case of complaints.
- **After skin contact:** If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Information for doctor:** Show the doctor this Material Safety Data Sheet.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 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.

#### · 5.1 Extinguishing media

- **Suitable extinguishing agents:** CO<sub>2</sub> or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet.
- **5.2 Special hazards arising from the substance or mixture** Carbon monoxide and carbon dioxide
- **5.3 Advice for firefighters**
- **Protective equipment:** Do not inhale gases in case of fire or combustion.
- **Additional information** Keep receptacles cool with water spray.

### SECTION 6: Accidental release measures

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

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

Keep away any ignition source.

Wear protective equipment. Keep unprotected persons away.

Use respiratory protective device against the effects of fumes.

#### · 6.2 Environmental precautions:

Dilute with plenty of water after collecting the liquid.

Prevent seepage into sewage system, workpits and cellars.

Inform respective authorities in case of seepage into water course or sewage system.

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- **6.3 Methods and material for containment and cleaning up:**  
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.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** 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.

- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

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

#### · 8.1 Control parameters

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

**Ethyl alcohol (50-100%)**

WEL (Great Britain) Long-term value: 1920 mg/m<sup>3</sup>, 1000 ppm

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

#### · 8.2 Exposure controls

- **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 selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.



Protective gloves

Rubber gloves

- **Material of gloves**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **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:**



Tightly sealed goggles

· **Body protection:**

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

### SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

<b>Molecular weight</b>	46 g
<b>Appearance:</b>	
<b>Form:</b>	Fluid
<b>Colour:</b>	Colourless
· <b>Odour:</b>	Like alcohol
· <b>Odour threshold:</b>	Not determined.
· <b>pH-value:</b>	Not determined.
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	-114.5 °C
<b>Boiling point/Boiling range:</b>	78 °C
· <b>Flash point:</b>	≤ 21 °C
· <b>Flammability (solid, gaseous):</b>	Not applicable.
· <b>Ignition temperature:</b>	425 °C
· <b>Decomposition temperature:</b>	Not determined.
· <b>Self-igniting:</b>	Product is not selfigniting.
· <b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
<b>Explosion limits:</b>	
<b>Lower:</b>	3.5 Vol %
<b>Upper:</b>	15 Vol %
· <b>Vapour pressure at 20 °C:</b>	59 hPa
· <b>Density at 20 °C:</b>	0.79 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water at 20 °C:</b>	1 g/l
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.

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<b>Kinematic:</b>	Not determined.
<b>Organic solvents:</b>	96.0 %
<b>9.2 Other information</b>	No further relevant information available.

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** See 10.3
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.  
Conditions to Avoid: Heat, flames and sparks.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Carbon monoxide, Carbon dioxide.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **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.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Method**
- **Ecological information** Not 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:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

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### SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **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.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA** UN1170

· **14.2 UN proper shipping name**

· **ADR** 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

· **IMDG** ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

· **IATA** ETHANOL SOLUTION

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class** 3 (F1) Flammable liquids.

· **Label** 3

· **IMDG, IATA**



· **Class** 3 Flammable liquids.

· **Label** 3

· **14.4 Packing group**

· **ADR, IMDG, IATA** II

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· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user** Warning: Flammable liquids.

· **Danger code (Kemler):** 33

· **EMS Number:** F-E,S-D

· **Transport/Additional information:**

· **ADR**

· **Excepted quantities (EQ):** E2

· **Limited quantities (LQ)** 1L

· **Transport category** 2

· **Tunnel restriction code** D/E

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

**SECTION 15: Regulatory information**

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Labelling according to Regulation (EC) No 1272/2008**

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

· **Hazard pictograms**



GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**

Ethyl alcohol

· **Hazard statements**

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

· **Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P264 Wash thoroughly after handling.

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

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P235 Store in a well-ventilated place. Keep cool.

· **National regulations:**

· **Information about limitation of use:** -

· **Technical instructions (air):**

Class	Share in %
NK	50-100

· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

**SECTION 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

· **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*

· **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*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

· **Sources**

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

*DIR. 1999/45/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*

*ADR 2011*

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### Annex: Exposure scenario

- **Short title of the exposure scenario** Chemical products for laboratory
- **Sector of Use**
  - SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
  - SU9 Manufacture of fine chemicals
  - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
  - SU24 Scientific research and development
- **Product category**
  - PC21 Laboratory chemicals
  - PC19 Intermediate
  - PC20 Products such as ph-regulators, flocculants, precipitants, neutralization agents
  - PC29 Pharmaceuticals
  - PC39 Cosmetics, personal care products
  - PC40 Extraction agents
- **Process category**
  - PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
  - PROC1 Use in closed process, no likelihood of exposure
  - PROC2 Use in closed, continuous process with occasional controlled exposure
  - PROC3 Use in closed batch process (synthesis or formulation)
  - PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
  - PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
  - PROC15 Use as laboratory reagent
- **Environmental release category**
  - ERC1 Manufacture of substances
  - ERC2 Formulation of preparations
  - ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
  - ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
- **Description of the activities / processes covered in the Exposure Scenario**  
See section 1 of the annex to the Safety Data Sheet.
- **Conditions of use** According to directions for use.
- **Duration and frequency** 5 workdays/week.
- **Physical parameters**
- **Physical state** Fluid
- **Concentration of the substance in the mixture** The substance is main component.
- **Used amount per time or activity**  
According to directions for use.  
Smaller than 100 g per application.
- **Other operational conditions**
- **Other operational conditions affecting environmental exposure**  
No special measures required.  
Observe section 6 of the Safety Data Sheet (Accidental release measures).
- **Other operational conditions affecting worker exposure**  
Take precautionary measures against static discharge.  
Keep away from sources of ignition - No smoking.
- **Other operational conditions affecting consumer exposure** No special measures required.
- **Other operational conditions affecting consumer exposure during the use of the product** Not applicable.
- **Risk management measures**
- **Worker protection**
- **Organisational protective measures**  
No special measures required.  
Keep good industrial hygiene.

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- **Technical protective measures** Provide explosion-proof electrical equipment.
- **Personal protective measures** Do not inhale gases / fumes / aerosols.
- **Measures for consumer protection** Ensure adequate labelling.
- **Environmental protection measures**
- **Water** No special measures required.
- **Disposal measures**  
Disposal must be made according to official regulations.  
Ensure that waste is collected and contained.
- **Disposal procedures**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Waste type** Partially emptied and uncleaned packaging
- **Exposure estimation**
- **Consumer** Not relevant for this Exposure Scenario.
- **Guidance for downstream users** No further relevant information available.

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