

Printing date 22.02.2019 Version number 12 Revision: 22.02.2019

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

- · 1.1 Product identifier
- · Molecular formula: C2 H6 O
- · Structure formula: C H3 C H2 O H · Trade name: Ethyl Alcohol 70% v/v
- · MSDS number: CH2074
- · 1.2 Relevant identified uses of the substance or mixture and uses advised against

Only for the use of professionals users No further relevant information available.

· Life cycle stages

IS Use at industrial Sites

F Formulation or re-packing

· Sector of Use

SU9 Manufacture of fine chemicals

SU24 Scientific research and development

· Product category

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC40 Extraction agents

· Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC15 Use as laboratory reagent

· Environmental release category

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC6a Use of intermediate

· Application of the substance / the mixture Chemicals 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: +33 (0)2 32 09 20 00

Télécopie: +33 (0)2 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



GHS02 flame

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



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

- · 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





GHS02

GHS07

- · Signal word Danger
- · 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

moking.

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): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

water for showers.

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

P337+P313 If eye irritation persists: Get medical advice/attention.

- · 2.3 Other hazards -
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- · 3.2 Chemical characterisation: Mixtures
- · Description:

Mixture made by the following substances:

water, distilled, conductivity or of similarpurity

>0-≤100%

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		(Contd. of page 2)
· Dangerous components:		
CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5 RTECS: KQ 6300000 Reg.nr.: 01-2119457610-43	Ethyl alcohol	♦ Flam. Liq. 2, H225; ♦ Eye Irrit. 2, H319 50-100%

SECTION 4: First aid measures

- · 4.1 Description of first aid measures
- · After inhalation:

Supply fresh air; consult a doctor in case of complaints.

Move the person into fresh air and immediately consult a doctor

Supply fresh air. If required, provide artificial respiration. Consult doctor.

- · After skin contact: If skin irritation continues, consult a doctor.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: Call for a doctor 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: CO2 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 or 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.

Ensure adequate ventilation

· 6.2 Environmental precautions:

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

Dilute with plenty of water after collecting the liquid.

Prevent seepage into sewage system, workpits and cellars.

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.

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· 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.

(Contd. of page 3)

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Pneumatic conveyance only with nitrogen or other inert gases.

· Information about fire - and explosion protection:



Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

Use explosion-proof apparatus / fittings and spark-proof tools.

- · 7.2 Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles:

Store in a cool location.

Use only receptacles specifically permitted for this substance/product.

- · Information about storage in one common storage facility: Not required.
- · 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 lin	it values tha	t require monitoring	at the workplace:
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CAS: 64-17-5 Ethyl alcohol

WEL Long-term value: 1920 mg/m³, 1000 ppm

· DNELs

CAS: 64-17-5 Ethyl alcohol

Dermal	DNEL (workers-systemic chronic effects)	343 mg/kg
Inhalative	DNEL (workers-local effects Acute)	19 mg/m3
	DNEL (workers-systemic chronic effects)	950 mg/m3

· PNECs

CAS: 64-17-5 Ethyl alcohol

PNEC (Fresh water)	0.96 mg/l
PNEC (Freshwater sedim	ent) 3.6 mg/kg
PNEC (Marine water)	0.79 mg/l
PNEC (Seawater sedimen	at) 2.9 mg/l
PNEC (STP)	580 mg/l

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PNEC (Soil)

0.63 mg/kg

- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

· Respiratory protection:

Use suitable respiratory protective device only when aerosol or mist is formed.

Filter P2

The selected respiratory protection must comply with standard EN 136/140/143/145/149.

· Protection of hands:

The selected protective gloves have to satisfy the specifications of REGULATION (EU) 2016/425 and the standard EN 374 derived from it.

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



Protective gloves

Rubber gloves

Avoid direct contact with the chemical/ the product/ the preparation by organisational measures.

· 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. 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.

Rubber gloves

· Penetration time of glove material

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eve protection:



Tightly sealed goggles

- · **Body protection:** Protective work clothing
- · Limitation and supervision of exposure into the environment

In case of unintended release of the product: See section 6 of the Safety Data Sheet.

· Risk management measures Keep good industrial hygiene.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties Molecular weight 46 g

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Important information on protection of health and environment, and on safety. 64-17-5 Ethyl alcohol MIE (TRGS-727) 0,28 mJ 7 pH-value: Not determined. Change in condition Melting point/freezing point: -114.5 °C Initial boiling point and boiling range: 78 °C Flash point: < 23 °C Flammability (solid, gas): Not applicable. Ignition temperature: 425 °C Decomposition temperature: Not determined. Auto-ignition temperature: Product is not selfigniting. Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible. Lower: 3.5 Vol % Upper: 15 Vol % Vapour pressure at 20 °C: 59 hPa Density at 20 °C: 0.79 g/cm³ Not determined. Vapour density Not determined. Vapour density Not determined. Solubility in / Miscibility with water: Fully miscible.	une numer Emyt Medici / 0 / 0 / / /	
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SECTION 10: Stability and reactivity

- · 10.1 Reactivity See 10.3
- · 10.2 Chemical stability
- · Thermal decomposition / conditions to be avoided:

Keadaan yang Perlu Dielakkan: Haba, api dan percikan api.

- · 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.



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SECTION 11: Toxicological information

- · 11.1 Information on toxicological effects
- · Acute toxicity Based on available data, the classification criteria are not met.
- · LD/LC50 values relevant for classification:

CAS: 64-17-5 Ethyl alcohol

Oral	LD50	6,200-15,000 mg/kg (rat)
	LD50	17,100 mg/kg (rabbit)
Inhalative	LC50/4 h	117 mg/L (rat)
	LC50	$>$ 50 mg/m 3 (rat)

- · Primary irritant effect:
- · Skin corrosion/irritation Based on available data, the classification criteria are not met.
- · Serious eye damage/irritation

Causes serious eye irritation.

- · Ingestion: It can be harmfull if swallowed.
- · Inhalation: May be harmful if inhaled.
- · Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- Other information (about experimental toxicology): No further relevant information available.
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- · Reproductive toxicity Based on available data, the classification criteria are not met.
- · STOT-single exposure Based on available data, the classification criteria are not met.
- · STOT-repeated exposure Based on available data, the classification criteria are not met.
- · Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity:

CAS: 64-17-5 Ethyl alcohol

EC50/48h 5,012 mg/l (Daphnia) (freshwater)

EC50 72 mg/L (algae)

LC50/96h 11,200 mg/l (fishes) (freshwater)

- · 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. 2014/955/UE: Council Decision of 18 December 2014 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 packaging materials contaminated with dangerous substances or preparations, have the same treatment of 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 inform	muton —
· 14.1 UN-Number · ADR, IMDG, IATA	UN1170
· 14.2 UN proper shipping name · ADR	1170 ETHANOL SOLUTION (ETHYL ALCOHO SOLUTION)
· IMDG · IATA	ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) Ethanol solution
· Class	3 (F1) Flammable liquids.
· Label · IMDG, IATA	
· Class	3 Flammable liquids.
· Lahel	3



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· 14.4 Packing group	
· ADR, IMDG, IATA	II
14.5 Environmental hazards:	
	No
· Marine pollutant:	NO
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	33
· EMS Number:	F- E , S - D
· Stowage Category	A
· 14.7 Transport in bulk according to Annex	x II of
Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ):	E2
· Limited quantities (LQ)	1L
· Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
·IMDG	
· Limited quantities (LQ)	IL
· Excepted quantities (EQ)	Code: E2
q(29)	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
. IIN "Model Decoderion".	1 11 1 0 0
· UN "Model Regulation":	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHO SOLUTION), 3, II
	SOLUTION), 3, 11

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · Seveso category P5c FLAMMABLE LIQUIDS
- · Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
- · Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
- · REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- · National regulations:
- · Information about limitation of use: -
- · Technical instructions (air):

Class	Share in %
Wasser	25-50
NK	50-100

- Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.



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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.

· Relevant phrases

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

· Department issuing SDS: 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 Organisation

RCR: Risk Characterisation Ratio

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 Harmonised 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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

·Sources

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

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

ADR2019

* Data compared to the previous version altered.

The sections where alterations took place are marked with an asterisk in the left border.

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Annex: Exposure scenario

- · Short title of the exposure scenario Substance manufacturing
- · Sector of Use Industrial use.
- · Product category

PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents

PC21 Laboratory chemicals

PC29 Pharmaceuticals

PC40 Extraction agents

· Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

- · Environmental release category ERC1 Manufacture of the substance
- 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.

Customary application according to section 1.

- · Duration and frequency 5 workdays/week.
- · Physical parameters

The data on the physical - chemical properties in the Exposure Scenario is based on the properties of the preparation.

· Physical state

Fluid

Fluid

- · Concentration of the substance in the mixture The substance is main component.
- · Used amount per time or activity According to directions for use.
- · 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.

Work clothes must not consist of textiles that exhibit dangerous melting behaviour in case of fire.

· Technical protective measures

Provide explosion-proof electrical equipment.

Ensure good ventilation/exhaustion at the workplace.

· Personal protective measures

Do not inhale gases / fumes / aerosols.

Tightly sealed goggles

The selected protective gloves have to satisfy the specifications of REGULATION (EU) 2016/425 and the standard EN 374 derived from it.

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

Protective gloves

Rubber gloves

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Avoid direct contact with the chemical/the product/the preparation by organisational measures.

- · Measures for consumer protection Ensure adequate labelling.
- · Environmental protection measures
- · Water No special measures required.
- · Notes In case of unintended release of the product: See section 6 of the Safety Data Sheet.
- · 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.

Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.

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