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

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

· **1.1 Product identifier**

· **Trade name: ethanol**

· **Article number:** 1086
· **CAS Number:**
64-17-5
· **EC number:**
200-578-6
· **Index number:**
603-002-00-5
· **Application of the substance / the mixture** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
PANREAC QUIMICA S.L.U.
C/Garraf 2
Polígono Pla de la Bruguera
E-08211 Castellar del Vallès (Barcelona)
Tel. (+34) 937 489 400
Fax. (+34) 937 489 401
e-mail: product.safety@itwreagents.com

· **Further information obtainable from:** email: product.safety@panreac.com
· **1.4 Emergency telephone number:**
Single telephone number for emergency calls: 112 (EU)
Tel.: (+34) 937 489 499

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.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the GB CLP regulation.

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Trade name: ethanol

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· **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 smoking.
P233	Keep container tightly closed.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

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

SECTION 3: Composition/information on ingredients

· **3.1 Substances**
· **CAS No. Description**
64-17-5 ethanol
· **Identification number(s)**
· **EC number:** 200-578-6
· **Index number:** 603-002-00-5

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Take affected persons out of danger area and lay down.
Take affected persons out into the fresh air.
Keep quiet and cover.
Seek medical treatment.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** If skin irritation continues, consult a doctor.
· **After eye contact:** Call a doctor immediately.
· **After swallowing:**
make victim drink water (maximum of 2 drinking glasses)
If symptoms persist consult doctor.
· **4.2 Most important symptoms and effects, both acute and delayed** Dizziness

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· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
Combustible.
Forms explosive mixtures with air at ambient temperatures.
Vapours ara heavier than air and may spread along floors.
Beware of backfiring.
Forms explosive mixtures with air on intense heating.
· **5.3 Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Contain escaping vapours with water.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Avoid substance contact.
Protect against electrostatic charges.
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources.
Avoid substance contact.
Do not inhale steams/aerosols.
· **6.2 Environmental precautions:**
danger of explosion!
Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
Clean up affected area.
· **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**
Keep away from heat and direct sunlight.
Work only in fume cupboard.
Keep receptacles tightly sealed.

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Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

· **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Provide solvent resistant, sealed floor.
Keep receptacles tightly sealed.
Store in a cool location.
· **Information about storage in one common storage facility:** Away from sources of ignition and heat.
· **Further information about storage conditions:**
Keep away from open flames, hot surfaces and sources of ignition.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Open receptacle only under localised extractor facilities.
Store receptacle in a well ventilated area.
Store only outside or in explosion proof rooms.
Store under lock and key and with access restricted to technical experts or their assistants only.
· **Recommended storage temperature:** Room Temperature
· **Storage class:** 3
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

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

64-17-5 ethanol

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

· **DNELs**

Oral	Long-term - systemic effects, general population	87 mg/kg
Dermal	Acute - systemic effects, worker	343 mg/kg
	Long term - systemic effects, general population	206 mg/kg
Inhalative	Acute - local effects, worker	1,900 mg/m3
	Long-term - systemic effects, worker	950 mg/m3
	Acute - local effects, general population	950 mg/m3
	Long-term - systemic effects, general population	114 mg/m3

· **PNECs**

Aquatic compartment - freshwater	0.96 mg/L
Aquatic compartment - marine water	0.79 mg/L
Aquatic compartment - water, intermittent releases	2.75 mg/L
Aquatic compartment - sediment in freshwater	3.6 mg/kg
Terrestrial compartment - soil	0.63 mg/kg
Sewage treatment plant	580 mg/L
Oral secondary poisoning	0.72 mg/kg food

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

· **8.2 Exposure controls**
· **Appropriate engineering controls** No further data; see section 7.
· **Individual protection measures, such as personal protective equipment**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Respiratory protection:**
Filter A
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Use suitable respiratory protective device only when aerosol or mist is formed.
· **Hand protection**
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
· **Material of gloves**
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.
· **For the permanent contact gloves made of the following materials are suitable:**
Butyl rubber, BR
Recommended thickness of the material: ≥ 0.7 mm
Value for the permeation: Level ≥ 480 min
· **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.4 mm
Value for the permeation: Level ≥ 120 min
· **Eye/face protection**



Tightly sealed goggles

· **Body protection:** Flame retardant antistatic protective clothing

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SECTION 9: Physical and chemical properties

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

· **Physical state**	Fluid
· **Colour:**	Colourless
· **Odour:**	Aromatic
· **Odour threshold:**	Not determined.
· **Melting point/freezing point:**	-114 °C
· **Boiling point or initial boiling point and boiling range**	78 °C
· **Flammability**	Not applicable. Highly flammable.

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· **Lower and upper explosion limit**	
· **Lower:**	2.5 Vol %
· **Upper:**	13.5 Vol %
· **Flash point:**	13 °C
· **Decomposition temperature:**	Not determined.
· **pH**	5.3
· **Viscosity:**	
· **Kinematic viscosity at 20 °C**	1.52 µm2/s (ISO 3104/3105)
· **Dynamic at 20 °C:**	1.2 mPas (ISO 3104/3105)
· **Solubility**	
· **water:**	Not determined.
· **Partition coefficient n-octanol/water (log value)**	-0.35
· **Vapour pressure at 20 °C:**	57.3 hPa
· **Density and/or relative density**	
· **Density at 20 °C:**	0.789 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.

· **9.2 Other information**	
· **Appearance:**	
· **Form:**	Fluid
· **Important information on protection of health and environment, and on safety.**	
· **Ignition temperature:**	Not determined.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· **Solvent content:**	
· **VOC (EC)**	100 %
· **Molecular weight**	46.08 g/mol
· **Change in condition**	
· **Evaporation rate**	Not determined.

· **Information with regard to physical hazard classes**	
· **Explosives**	Void
· **Flammable gases**	Void
· **Aerosols**	Void
· **Oxidising gases**	Void
· **Gases under pressure**	Void
· **Flammable liquids**	Highly flammable liquid and vapour.
· **Flammable solids**	Void
· **Self-reactive substances and mixtures**	Void
· **Pyrophoric liquids**	Void
· **Pyrophoric solids**	Void
· **Self-heating substances and mixtures**	Void
· **Substances and mixtures, which emit flammable gases in contact with water**	Void
· **Oxidising liquids**	Void
· **Oxidising solids**	Void
· **Organic peroxides**	Void
· **Corrosive to metals**	Void

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· **Desensitised explosives**	Void

SECTION 10: Stability and reactivity

· **10.1 Reactivity** Forms explosive gas mixture with air.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions**
Exothermic reactions with:
oxidizing agent
strong acids
alkaline earth metals
alkali metals
strong oxidants
· **10.4 Conditions to avoid**
Danger of receptacles bursting because of high vapour pressure when heated.
Forms explosive gas mixture with air.
· **10.5 Incompatible materials:**
Exothermic reactions with:
strong acids
strong oxidants
alkali metals
alkaline earth metals
· **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5
· **Additional information:** Explosible with air in a vaporous/gaseous state.

SECTION 11: Toxicological information

· **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
· **Acute toxicity** Based on available data, the classification criteria are not met.
· **LD/LC50 values relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

· **Components**	**Type**	**Value**	**Species**
Oral	LD50	8,350 mg/kg	(mouse)
		10,470 mg/kg	(rat)
Inhalative	LC50/4 h	116.9 mg/l	(rat)

· **Serious eye damage/irritation** Causes serious eye irritation.
· **After inhalation:** No irritant effect.

· **Carcinogenicity**	
NOAEL (carcinogenicity)	>3,000 mg/kg bw/day (rat)

· **Reproductive toxicity**	
NOAEL (Fertility)	13,800 mg/kg bw/day (mouse)

· **11.2 Information on other hazards**
· **Endocrine disrupting properties** Substance is not listed.

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SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.

· Type of test	Effective concentration	Method	Assessment
EC50/72 h	275 mg/l (Algae)		
EC50/48 h	12,900 mg/l (Algae)		
LC50/24 h	11,200 mg/l (fish)		
LC50/48 h	12,340 mg/l (daphnia magna)		
LC50/96 h	13,000 mg/l (fish)		

· **12.2 Persistence and degradability** The product is easily biodegradable.
· **12.3 Bioaccumulative potential** -0.35 log Pow
· **12.4 Mobility in soil** No further relevant information available.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Endocrine disrupting properties**
The product does not contain substances with endocrine disrupting properties.
· **12.7 Other adverse effects**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**
· **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.

SECTION 14: Transport information

· **14.1 UN number or ID number**
· **ADR, IMDG, IATA** UN1170

· **14.2 UN proper shipping name**
· **ADR, IMDG** ETHANOL (ETHYL ALCOHOL)
· **IATA** ETHANOL

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· **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
· **14.5 Environmental hazards:**	Not applicable.
· **14.6 Special precautions for user**	Warning: Flammable liquids.
· **Hazard identification number (Kemler code):**	33
· **EMS Number:**	F-E,S-D
· **Stowage Category**	A
· **14.7 Maritime transport in bulk according to IMO instruments**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **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)**	1L
· **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Poisons Act**
· **Regulated explosives precursors** Substance is not listed.
· **Regulated poisons** Substance is not listed.
· **Reportable explosives precursors** Substance is not listed.

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· **Reportable poisons** Substance is not listed.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** Substance is not 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
· **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.

· **Abbreviations and acronyms:**
ICAO: International Civil Aviation Organisation
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ADR: Accord relatif au transport international 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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK 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
· *** Data compared to the previous version altered.**

Annex: Exposure scenario

· **Short title of the exposure scenario** Use in laboratories
· **Description of the activities / processes covered in the Exposure Scenario**
See section 1 of the annex to the Safety Data Sheet.
· **Conditions of use**
· **Duration and frequency** 5 workdays/week.
· **Physical parameters**
· **Physical state** Fluid
· **Concentration of the substance in the mixture** Raw material.
· **Other operational conditions**
· **Other operational conditions affecting environmental exposure** No special measures required.
· **Other operational conditions affecting worker exposure**
Avoid contact with eyes.
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.

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Trade name: ethanol

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· **Technical protective measures**
Provide explosion-proof electrical equipment.
Ensure that suitable extractors are available on processing machines
· **Personal protective measures**
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes.
Tightly sealed goggles
· **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** 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**
· **Worker (dermal)** The highest dermal exposure to be expected is 0.34 mg / kg / day.
· **Worker (inhalation)** The highest inhalative exposure to be expected is 10 ppm.
· **Environment**
The highest environmental exposure to be expected for surface waters is 0.0155 mg / L.
The highest environmental exposure to be expected for soil surfaces is 0.00215 g / m² / day.
· **Consumer** Not relevant for this Exposure Scenario.
· **Guidance for downstream users** No further relevant information available.