

Ethanol 96%

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 03/04/2017 Version: 0.0

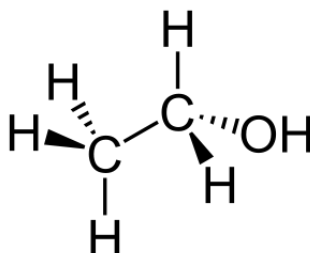
Doc No: SDS-920.052



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

1.1. Product identifier

Product form : Substance
Substance name : Ethanol 96 %
EC Index-No. : 603-002-00-5
EC-No. : 200-578-6
CAS-No. : 64-17-5
Type of product : Pure substance
Formula : C₂H₆O
Chemical structure :



Synonyms : ethanol (ethyl alcohol) / ethanol, anhydrous, undenatured / ethyl alcohol

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB GmbH
Bahnhofstrasse 10, D-97877
Wertheim - Germany
T +49 93 42 912 355 - F +49 93 42 912 357
prodsafe@isolab.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftsgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 30 19240	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Liq. 2 H225

Eye Irrit. 2 H319

Full text of hazard classes and H-statements : see section 16

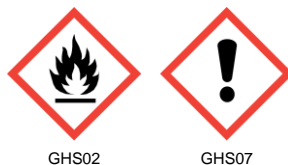
Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

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Signal word (CLP)	: Danger
Hazard statements (CLP)	: H225 - Highly flammable liquid and vapour H319 - Causes serious eye irritation
Precautionary statements (CLP)	: P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P240: Ground/bond container and receiving equipment. 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 + P233: Store in a well-ventilated place. Keep container tightly closed

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%
Ethanol	(CAS-No.) 64-17-5 (EC-No.) 200-578-6 (EC Index-No.) 603-002-00-5	96

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties. Central nervous system depression. Symptoms similar to those listed under ingestion.
Symptoms/effects after skin contact	: Dry skin.
Symptoms/effects after eye contact	: Redness of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Lacrimation. Irritation of the eye tissue.
Symptoms/effects after ingestion	: AFTER ABSORPTION OF HIGH QUANTITIES: Risk of aspiration pneumonia. Red skin. Body temperature rise. Damp/clammy skin. Excited/restless. Accelerated heart action. Central nervous system depression. Dizziness. Narcosis. Headache. Drunkenness. Nausea. Vomiting. Disturbed motor response. Coordination disorders. Visual disturbances. Impaired concentration. Delusions. Disturbed sensation of pain. Disturbances of heart rate. Disturbances of consciousness. Tremor. Cramps/uncontrolled muscular contractions. Dilated pupils.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Gastrointestinal complaints. Enlargement/affection of the liver. Change in the haemogramme/blood composition. Cardiac and blood circulation effects. High arterial pressure. Impairment of the nervous system. Behavioural disturbances. Mental confusion. Disturbed tactile sensibility. Tremor. Affection of the bone marrow. Affection of the endocrine system. Weakening of the immune system.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

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SECTION 5: Fire-fighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Alcohol-resistant foam. BC powder. Carbon dioxide.
- Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : DIRECT FIRE HAZARD. Highly flammable. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Reactions involving a fire hazard: see "Reactivity Hazard".
- Explosion hazard : DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Protective goggles. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. See "Material-Handling" to select protective clothing.
- Emergency procedures : Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.
- Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite or kieselguhr, powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

7.2. Conditions for safe storage, including any incompatibilities

- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. metals. peroxides. halogens. ignition sources.
- Storage area : Keep out of direct sunlight. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Meet the legal requirements.

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Special rules on packaging

: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials

: SUITABLE MATERIAL: stainless steel. aluminium. iron. copper. nickel. synthetic material. glass. MATERIAL TO AVOID: No data available.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethanol (64-17-5)		
Austria	Local name	Ethanol
Austria	MAK (mg/m ³)	1900 mg/m ³
Austria	MAK (ppm)	1000 ppm
Austria	MAK Short time value (mg/m ³)	3800 mg/m ³
Austria	MAK Short time value (ppm)	2000 ppm
Belgium	Local name	Alcool éthylique # Ethanol
Belgium	Limit value (mg/m ³)	1907 mg/m ³ (Alcool éthylique; Belgium; Time-weighted average exposure limit 8 h)
Belgium	Limit value (ppm)	1000 ppm (Alcool éthylique; Belgium; Time-weighted average exposure limit 8 h)
Bulgaria	Local name	Етилов алкохол
Bulgaria	OEL TWA (mg/m ³)	1000 mg/m ³
Croatia	Local name	Etanol; (Etil-alkohol)
Croatia	GVI (granična vrijednost izloženosti) (mg/m ³)	1900 mg/m ³
Croatia	GVI (granična vrijednost izloženosti) (ppm)	1000 ppm
Croatia	Naznake (HR)	F (lako zapaljivo)
Czech Republic	Local name	Ethanol
Czech Republic	Expoziční limity (PEL) (mg/m ³)	1000 mg/m ³
Czech Republic	Expoziční limity (PEL) (ppm)	530 ppm
Czech Republic	Expoziční limity (NPK-P) (mg/m ³)	3000 mg/m ³
Czech Republic	Expoziční limity (NPK-P) (ppm)	1600 ppm
Denmark	Local name	Ethanol (Ethylalkohol)
Denmark	Grænseværdie (langvarig) (mg/m ³)	1900 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	1000 ppm
Estonia	Local name	Etanool (etüülalkohol)
Estonia	OEL TWA (mg/m ³)	1000 mg/m ³
Estonia	OEL TWA (ppm)	500 ppm
Estonia	OEL STEL (mg/m ³)	1900 mg/m ³
Estonia	OEL STEL (ppm)	1000 ppm
Finland	Local name	Etanoli
Finland	HTP-arvo (8h) (mg/m ³)	1900 mg/m ³
Finland	HTP-arvo (8h) (ppm)	1000 ppm
Finland	HTP-arvo (15 min)	2500 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	1300 ppm
France	Local name	Alcool éthylique
France	VME (mg/m ³)	1900 mg/m ³ (Alcool éthylique; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VME (ppm)	1000 ppm (Alcool éthylique; France; Time-weighted average exposure limit 8 h; VL: Valeur non réglementaire indicative)
France	VLE (mg/m ³)	9500 mg/m ³ (Alcool éthylique; France; Short time value; VL: Valeur non réglementaire indicative)

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Ethanol (64-17-5)		
France	VLE (ppm)	5000 ppm (Alcool éthylique; France; Short time value; VL: Valeur non réglementaire indicative)
France	Note (FR)	Valeurs recommandées/admises
Germany	Local name	Ethanol
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	960 mg/m ³
Germany	TRGS 900 Occupational exposure limit value (ppm)	500 ppm
Germany	Remark (TRGS 900)	DFG, Y
Greece	OEL TWA (mg/m ³)	1900 mg/m ³
Greece	OEL TWA (ppm)	1000 ppm
Hungary	Local name	ETIL-ALKOHOL
Hungary	AK-érték	1900 mg/m ³
Hungary	CK-érték	7600 mg/m ³
Hungary	Megjegyzések (HU)	IV.
Ireland	Local name	Ethanol
Ireland	OEL (15 min ref) (ppm)	1000 ppm
Latvia	Local name	Etilspirts (etanols)
Latvia	OEL TWA (mg/m ³)	1000 mg/m ³
Lithuania	Local name	Etanolis (etilo alkoholis)
Lithuania	IPRV (mg/m ³)	1000 mg/m ³
Lithuania	IPRV (ppm)	500 ppm
Lithuania	TPRV (mg/m ³)	1900 mg/m ³
Lithuania	TPRV (ppm)	1000 ppm
Netherlands	Local name	Ethanol
Netherlands	Grenswaarde TGG 8H (mg/m ³)	260 mg/m ³ (Ethanol; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 8H (ppm)	136 ppm (Ethanol; Netherlands; Time-weighted average exposure limit 8 h; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (mg/m ³)	1900 mg/m ³ (Ethanol; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Grenswaarde TGG 15MIN (ppm)	992 ppm (Ethanol; Netherlands; Short time value; Public occupational exposure limit value)
Netherlands	Remark (MAC)	H (Huidopname) Stoffen die relatief gemakkelijk door de huid kunnen worden opgenomen, hetgeen een substantiële bijdrage kan betekenen aan de totale inwendige blootstelling, hebben in de lijst een Haanduiding. Bij deze stoffen moeten naast maatregelen tegen inademing ook adequate maatregelen ter voorkoming van huidcontact worden genomen.
Poland	Local name	Etanol (alkohol etylowy)
Poland	NDS (mg/m ³)	1900 mg/m ³
Portugal	Local name	Etanol (Álcool etílico)
Portugal	OEL STEL (ppm)	1000 ppm
Romania	Local name	Alcool etilic
Romania	OEL TWA (mg/m ³)	1900 mg/m ³
Romania	OEL TWA (ppm)	1000 ppm
Romania	OEL STEL (mg/m ³)	9500 mg/m ³
Romania	OEL STEL (ppm)	5000 ppm
Slovakia	Local name	Etylalkohol (etanol)
Slovakia	NPHV (priemerná) (mg/m ³)	960 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	500 ppm
Slovakia	OEL STEL (mg/m ³)	1920 mg/m ³
Slovakia	OEL STEL (ppm)	1000 ppm

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Ethanol (64-17-5)		
Slovenia	Local name	etanol (etilalkohol)
Slovenia	OEL TWA (mg/m ³)	1900 mg/m ³
Slovenia	OEL TWA (ppm)	1000 ppm
Slovenia	OEL STEL (mg/m ³)	7600 mg/m ³
Slovenia	OEL STEL (ppm)	4000 ppm
Spain	Local name	Etanol (Alcohol etílico)
Spain	VLA-EC (mg/m ³)	1910 mg/m ³
Spain	VLA-EC (ppm)	1000 ppm
Spain	Notes	s (Esta sustancia tiene prohibida total o parcialmente su comercialización y uso como fitosanitario y/o como biocida. Para una información detallada acerca de las prohibiciones consúltese: Base de datos de productos biocidas: http://www.msssi.gob.es/ciudadanos/productos.do?tip o=plaguicidas Base de datos de productos fitosanitarios http://www.magrama.gob.es/agricultura/pags/fitos/regi stro/fichas/pdf/Lista_sa.pdf).
Sweden	Local name	Etanol
Sweden	nivågränsvärde (NVG) (mg/m ³)	1000 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	500 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	1900 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	1000 ppm
Sweden	Anmärkning (SE)	V (Vägledande kortidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
United Kingdom	Local name	Ethanol
United Kingdom	WEL TWA (mg/m ³)	1920 mg/m ³ Ethanol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
United Kingdom	WEL TWA (ppm)	1000 ppm Ethanol; United Kingdom; Time-weighted average exposure limit 8 h; Workplace exposure limit (EH40/2005)
Iceland	Local name	Etanól (etylalkóhól)
Iceland	OEL (8 hours ref) (mg/m ³)	1900 mg/m ³
Iceland	OEL (8 hours ref) (ppm)	1000 ppm
Russian Federation	Local name	Этанол
Russian Federation	OEL Ceiling (mg/m ³)	2000 mg/m ³
Russian Federation	OEL TWA (mg/m ³)	1000 mg/m ³
Russian Federation	Remark (RU)	4 класс опасности - умеренно опасное; п (пары и/или газы)
Norway	Local name	Etanol
Norway	Grenseverdier (AN) (mg/m ³)	950 mg/m ³
Norway	Grenseverdier (AN) (ppm)	500 ppm
Switzerland	Local name	Ethanol
Switzerland	VME (mg/m ³)	960 mg/m ³ 960 mg/m ³
Switzerland	VME (ppm)	500 ppm 500 ppm
Switzerland	VLE (mg/m ³)	1920 mg/m ³ 1920 mg/m ³
Switzerland	VLE (ppm)	1000 ppm 1000 ppm
Switzerland	Remark (CH)	SS _C - OAW, Formal ^{KT HU} - INRS, NIOSH
Australia	Local name	Ethyl alcohol

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Ethanol (64-17-5)		
Australia	TWA (mg/m ³)	1880 mg/m ³ Synonym (Ethanol)
Australia	TWA (ppm)	1000 ppm Synonym (Ethanol)
USA - ACGIH	Local name	Ethanol
USA - ACGIH	ACGIH STEL (ppm)	1000 ppm (Ethanol; USA; Short time value; TLV - Adopted Value)
USA - ACGIH	Remark (ACGIH)	URT irr
USA - OSHA	Local name	Ethyl alcohol (Ethanol)
USA - OSHA	OSHA PEL (TWA) (mg/m ³)	1900 mg/m ³
USA - OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

8.2. Exposure controls

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. GIVE GOOD RESISTANCE: chloroprene rubber. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: natural rubber. nitrile rubber. latex

Hand protection:

Gloves

Eye protection:

Safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 46.07 g/mol
Colour	: Colourless.
Odour	: Alcohol odour. Pleasant odour.
Odour threshold	: 100 ppm 188 mg/m ³
pH	: 7.0 (10 g/l, H ₂ O, 20 °C)
pH solution	: 10 g/l
Relative evaporation rate (butylacetate=1)	: 2.4
Relative evaporation rate (ether=1)	: 8.3
Melting point	: -114.5 °C
Freezing point	: No data available
Boiling point	: 78.3 °C
Flash point	: 12 °C
Critical temperature	: 243 °C
Auto-ignition temperature	: 363 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: 59 hPa (20 °C)
Vapour pressure at 50 °C	: 78.7 hPa (25 °C)
Critical pressure	: 63840 hPa
Relative vapour density at 20 °C	: 1.03
Relative density	: 0.79
Relative density of saturated gas/air mixture	: 1.04
Density	: 0.790 - 0.793 g/cm ³ (20 °C)

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Solubility	: Soluble in water. Soluble in ether. Soluble in acetone. Soluble in chloroform. Soluble in oils/fats. Soluble in methanol. Soluble in acids. Water: Complete
Log Pow	: -0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 1.19 mPa·s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 3.5 – 15% (V)

9.2. Other information

Specific conductivity	: 130000 pS/m
Saturation concentration	: 112 g/m ³
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Volatile. Substance has neutral reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion: CO and CO₂ are formed. Reacts violently with many compounds e.g.: with (strong) oxidizers: (increased) risk of fire/explosion. Violent to explosive reaction with (some) acids.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Ethanol (64-17-5)	
LD50 oral rat	7060 mg/kg

Skin corrosion/irritation	: Not classified pH: 7 (10 g/l)
Serious eye damage/irritation	: Causes serious eye irritation. pH: 7 (10 g/l)
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
IARC group	: 1

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SECTION 12: Ecological information

12.1. Toxicity

- Ecology - general : Not classified as dangerous for the environment according to the criteria of Directive 67/548/EEC. Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
- Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.5.
- Ecology - water : Ground water pollutant. Not harmful to fishes (LC50(96h) >1000 mg/l). Not harmful to invertebrates (Daphnia). Slightly harmful to algae (EC50 (72h): 100 - 1000 mg/l). Not harmful to bacteria (EC50 >1000 mg/l). Inhibition of activated sludge.

Ethanol (64-17-5)	
LC50 fish 2	13000 mg/l (LC50; 96 h; Salmo gairdneri; Static system; Fresh water)

12.2. Persistence and degradability

Ethanol (64-17-5)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O ₂ /g substance
Chemical oxygen demand (COD)	1.7 g O ₂ /g substance
ThOD	2.1 g O ₂ /g substance

12.3. Bioaccumulative potential

Ethanol (64-17-5)	
Log Pow	-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Ethanol (64-17-5)	
Surface tension	0.0245 N/m (20 °C)

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into drains or the environment. May be discharged to wastewater treatment installation.

Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.

European List of Waste (LoW) code : 07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1170	1170	1170	1170	1170
14.2. UN proper shipping name				
ETHANOL (ETHYL ALCOHOL)	ETHANOL (ETHYL ALCOHOL)	Ethanol	ETHANOL (ETHYL ALCOHOL)	ETHANOL (ETHYL ALCOHOL)

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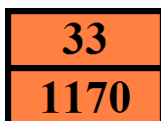


ADR	IMDG	IATA	ADN	RID
Transport document description				
UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II, (D/E)	UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II	UN 1170 Ethanol, 3, II	UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II	UN 1170 ETHANOL (ETHYL ALCOHOL), 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Classification code (ADR)	: F1
Special provisions (ADR)	: 144, 601
Limited quantities (ADR)	: 1I
Excepted quantities (ADR)	: E2
Packing instructions (ADR)	: P001, IBC02, R001
Mixed packing provisions (ADR)	: MP19
Portable tank and bulk container instructions (ADR)	: T4
Portable tank and bulk container special provisions (ADR)	: TP1
Tank code (ADR)	: LGBF
Vehicle for tank carriage	: FL
Transport category (ADR)	: 2
Special provisions for carriage - Operation (ADR)	: S2, S20
Hazard identification number (Kemler No.)	: 33
Orange plates	:



Tunnel restriction code (ADR) : D/E

- Transport by sea

Transport regulations (IMDG)	: Subject
Special provisions (IMDG)	: 144
Limited quantities (IMDG)	: 1 L
Excepted quantities (IMDG)	: E2
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC02
Tank instructions (IMDG)	: T4
Tank special provisions (IMDG)	: TP1
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-D
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: Colourless, volatile liquids. Pure ETHANOL: flashpoint 13°C c.c. Explosive limits: 3.3% to 19% Miscible with water.

Ethanol 96 %

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- Air transport

Transport regulations (IATA) : Subject to the provisions
PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3, A58, A180
ERG code (IATA) : 3L

- Inland waterway transport

Classification code (ADN) : F1
Special provisions (ADN) : 144, 601
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport

Transport regulations (RID) : Subject
Classification code (RID) : F1
Special provisions (RID) : 144, 601
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02, R001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1
Tank codes for RID tanks (RID) : LGBF
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
Ethanol is not on the REACH Candidate List
Ethanol is not on the REACH Annex XIV List

VOC content : 100 %

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 1 or 2; ID No. 96)

Ethanol 96 %

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WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : Ethanol is listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : Ethanol is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : Ethanol is listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : Ethanol is listed

Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation

SDS ISOLAB

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product