

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

1.1. Product identifier

Product form	: Substance
Trade name	: Ethanol max. 24% vol.
IUPAC name	: Ethanol
EC Index-No.	: 603-002-00-5
EC-No.	: 200-578-6
CAS-No.	: 64-17-5
REACH registration No	: 01-2119457610-43-xxxx
Formula	: C2H6O

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

1.2.1. Relevant identified uses

Main use category	: Industrial use, Professional use
Use of the substance/mixture	: Food sector: Beverages, food products such as mildew/antibacterial, alcohol fort his use shall conform to EC Regulation 110/2008. Relevant indentified uses: (non food sector): Function: solvent for industrial applications and raw material for fuel, antifreeze fluids, detergents, inks, and cosmetics. Used in chemical laboratory and manufacturing chemicals. Heat transfer agent. Intermediate. Food sector: Beverages, food products such as mildew/antibacterial, alcohol fort his use shall conform to EC Regulation 110/2008. Relevant indentified uses: (non food sector): Function: solvent for industrial applications and raw material for fuel, antifreeze fluids, detergents, inks, and cosmetics. Used in chemical laboratory and manufacturing chemicals. Heat transfer agent. Intermediate.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Sasma
Willem Dreeslaan 301
2729 NE Zoetermeer - Netherlands
T +31 79 363 30 64
sales@sasmabv.com - www.sasmabv.com

1.4. Emergency telephone number

Emergency number	: Worldwide: For Hazardous Materials (or Dangerous Goods) Incident, Spill, Leak, Exposure, or Accident – Call NCEC Day or Night(24/7) +441865407333 - SASMA29003-NCEC
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Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2	H225
Serious eye damage/eye irritation, Category 2	H319
Full text of H statements : see section 16	

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Adverse physicochemical, human health and environmental effects

Highly flammable liquid and vapour. Causes serious eye irritation.

2.2. Label elements

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

Hazard pictograms (CLP)



GHS02

GHS07

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.

P280 - Wear eye protection, protective gloves, protective clothing.

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

Listed in Annex VI

: EC Index-No. : 603-002-00-5

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	: Ethanol
CAS-No.	: 64-17-5
EC-No.	: 200-578-6
EC Index-No.	: 603-002-00-5

Name	Product identifier	%
Water		≥ 76
Ethanol	(CAS-No.) 64-17-5 (EC-No.) 200-578-6 (EC Index-No.) 603-002-00-5 (REACH-no) 01-2119457610-43-xxxx	≤ 24

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Respiratory arrest: artificial respiration or oxygen. Vomiting: prevent asphyxia/aspiration pneumonia. If medical advice is needed, have product container or label at hand. Keep watching the victim. Check the vital functions. Keep the victim calm, avoid physical strain. IF exposed or concerned: Get medical advice/attention. Prevent cooling by covering the victim (no warming up).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Respiratory problems: consult a doctor/medical service. Give oxygen or artificial respiration if necessary. keep the victim calm, in a half-sitting position.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell. Do not induce vomiting.

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

Symptoms/effects after inhalation	: EXPOSURE TO HIGH CONCENTRATIONS: Depression of the central nervous system, headaches, dizziness, drowsiness, loss of coordination.
Symptoms/effects after skin contact	: Contact during a long period may cause light irritation.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Central nervous system depression. Nausea. Vomiting.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Highly flammable liquid and vapour.
Hazardous decomposition products in case of fire	: Toxic fumes may be released. Upon combustion: CO and CO ₂ are formed.

5.3. Advice for firefighters

Precautionary measures fire	: Eliminate all ignition sources if safe to do so. Keep container closed when not in use. Keep container tightly closed and away from heat, sparks and flame. Keep cool. Protect from sunlight.
Firefighting instructions	: Eliminate all ignition sources if safe to do so. Keep people away. Isolate the area where it burns and do not stand unnecessary entrance. Use water spray around containers that have been exposed to fire and put it on the fire cool the affected area until the fire is extinguished and the danger of re-ignition has passed. Fight fire from protected place or at a safe distance. Consider using unmanned water cannons. Immediately remove all personnel from the area upon detection the safety valve or discoloration of the container. Burning liquids can be extinguished by diluting with water. Do not use a direct water jet. This can spread the fire. Move container away from fire area, if this can be done without danger. Burning liquids may be removed with running water to protect personnel and damage to minimize property. Take account of environmentally hazardous firefighting water.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: If leakage cannot be stopped, evacuate the area. Ensure adequate ventilation. Avoid breathing vapors / spray and contact with skin and eyes. Not spilled material touch or walk in. Eliminate all sources of ignition. Keep away from heat, sparks and open fire. Wear protective clothing as described in Section 8 of this Safety Data Sheet.
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6.1.1. For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment. Do not allow to enter drains or water courses. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Cover spill with non combustible material, e.g.: sand, earth, vermiculite. Do not use compressed air for pumping over spills. Do not touch or walk on the spilled product. Provide adequate ventilation.
- Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : In use, may form flammable vapour-air mixture. Handle empty containers with care because residual vapours are flammable. Flammable vapours may accumulate in the container. Do not pierce or burn, even after use.
- Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Ground/bond container and receiving equipment.
- Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed.
- Incompatible products : Oxidizing agent. Strong acids.
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: ignition sources. heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. ignition sources. highly flammable materials. combustible materials.
- Storage area : Keep out of direct sunlight. Store away from heat. Fireproof storeroom. Store in a dark area. Store in a dry area. Store in a well-ventilated place. Store in a cool area.
- Packaging materials : SUITABLE MATERIAL: HDPE, iron, carbon steel, synthetic material, metal, polypropylene, stainless steel, glass. MATERIAL TO AVOID: aluminium, PVC, zinc, copper.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethanol max. 24% vol. (64-17-5)

DNEL/DMEL (Workers)

Long-term - systemic effects, dermal	343 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	950 mg/m ³
Long-term - local effects, inhalation	1900 mg/m ³

DNEL/DMEL (General population)

Long-term - systemic effects, oral	87 mg/kg bodyweight/day
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Long-term - systemic effects, inhalation	114 mg/m ³
Long-term - systemic effects, dermal	206 mg/kg bodyweight/day
Long-term - local effects, inhalation	950 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.96 mg/l
PNEC aqua (marine water)	0.79 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	3.6 mg/kg dwt
PNEC sediment (marine water)	2.9 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.63 mg/kg dwt
PNEC (Oral)	
PNEC oral (secondary poisoning)	380 mg/kg food
PNEC (STP)	
PNEC sewage treatment plant	580 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. GIVE LESS RESISTANCE: chloroprene rubber

Hand protection:

Protective gloves

Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Reusable gloves	Butyl rubber, Nitrile rubber (NBR)	6 (> 480 minutes)	0.5		EN ISO 374

Eye protection:

Safety glasses

Type	Use	Characteristics	Standard
Safety goggles		With side shields	EN 166

Skin and body protection:

Wear fire/flame resistant/retardant clothing. Chemical resistant safety shoes

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Device	Filter type	Condition	Standard
Gas mask	Type A - High-boiling (>65 °C) organic compounds		EN 14387

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Personal protective equipment symbol(s):



Environmental exposure controls:

Avoid release to the environment. Ethanol is classed as a VOC under Directive 99/13/EC. Abatement measures such as incineration or recovery should be used in combination with emission controls to ensure compliance with this legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid.
Molecular mass	: 46.07 g/mol
Colour	: Colourless.
Odour	: Alcohol odour. Pleasant odour.
Odour threshold	: 100 ppm 18.8 mg/m ³
pH	: 7
pH solution	: 10 g/l
Relative evaporation rate (butylacetate=1)	: 2.4
Relative evaporation rate (ether=1)	: 8.3
Melting point	: -114 °C
Freezing point	: No data available
Boiling point	: 78 °C
Flash point	: 31 °C
Auto-ignition temperature	: 363
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: 5726 Pa @ 20° C
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 0.948 g/cm ³ @ 25 °C
Solubility	: Soluble in water. Soluble in ether. Soluble in acetone. Soluble in chloroform. Soluble in oils/fats. Soluble in methanol. Soluble in acids. Water: Full
Partition coefficient n-octanol/water (Log Pow)	: -0.35
Viscosity, kinematic	: 1.266 mm ² /s
Viscosity, dynamic	: 1.2 mPa·s
Explosive properties	: the study does not need to be conducted because there are no chemical groups present in the molecule which are associated with explosive properties.
Oxidising properties	: the study does not need to be conducted because there are no chemical groups present in the molecule which are associated with oxidising properties and hence, the classification procedure does not need to be applied.
Lower explosive limit (LEL)	: 2.5 vol %
Upper explosive limit (UEL)	: 13.5 vol %

9.2. Other information

Specific conductivity	: < 1 µS/m
VOC content	: 175 – 190 g/l
Refractive index	: 1.361 @ 20 °C
Other properties	: Gas/vapour heavier than air at 20°C. Clear.

SECTION 10: Stability and reactivity

10.1. Reactivity

Highly flammable liquid and vapour.

Ethanol max. 24% vol.

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10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Strong oxidizing agents, Peroxides, Alkali metals, Ammonia, Hydrogen peroxide.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Oxidizing agent. Strong acids.

10.6. Hazardous decomposition products

Thermal decomposition generates : Carbon oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Ethanol max. 24% vol. (64-17-5)	
LD50 oral rat	6.2 – 15 g/kg
LD50 dermal rabbit	16000 mg/kg
LC50 Inhalation - Rat (Vapours)	> 50 mg/l/4h

Ethanol (64-17-5)	
LD50 oral rat	15010 mg/kg
LD50 dermal rabbit	16000 mg/kg
LC50 Inhalation - Rat [ppm]	> 60000 ppm/1h

Skin corrosion/irritation : Not classified
pH: 7
Serious eye damage/irritation : Causes serious eye irritation.
pH: 7
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Ethanol max. 24% vol. (64-17-5)	
NOAEL (chronic, oral, animal/male, 2 years)	> 3000 mg/kg bodyweight Rat

Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

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Ethanol max. 24% vol. (64-17-5)

Viscosity, kinematic	1.266 mm ² /s
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SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

Ethanol max. 24% vol. (64-17-5)

LC50 fish 1	13 g/l
EC50 Daphnia 1	12.3 g/l
EC50 72h algae (1)	275 mg/l

Ethanol (64-17-5)

LC50 fish 1	14200 mg/l
EC50 Daphnia 1	5012 mg/l
EC50 72h algae (1)	275 mg/l

12.2. Persistence and degradability

Ethanol max. 24% vol. (64-17-5)

Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test) data on mobility of the substance available.
Chemical oxygen demand (COD)	1.7 g O ₂ /g substance
ThOD	2.1 g O ₂ /g substance
Biodegradation	84 %

Ethanol (64-17-5)

Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test) data on mobility of the substance available.
Chemical oxygen demand (COD)	1.7 g O ₂ /g substance
ThOD	2.1 g O ₂ /g substance

12.3. Bioaccumulative potential

Ethanol max. 24% vol. (64-17-5)

Partition coefficient n-octanol/water (Log Pow)	-0.35
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Ethanol (64-17-5)

Partition coefficient n-octanol/water (Log Pow)	0.35
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Ethanol max. 24% vol.

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12.4. Mobility in soil

Ethanol max. 24% vol. (64-17-5)

Mobility in soil	Release to air or water:	Ethanol is volatile and water soluble and is dispersed rapidly.
	Release to soil or sediments:	Ethanol is poorly absorbed and evaporates at a rapid rate.

12.5. Results of PBT and vPvB assessment

Ethanol max. 24% vol. (64-17-5)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component

Ethanol (64-17-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Water ()	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Do not burn empty packaging. Do not cut using a blowtorch. Beware of residues or vapours which remain in the drums.
Additional information	: Flammable vapours may accumulate in the container.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

Special transport precautions : Special Provision 144 applies

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Overland transport

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

Inland waterway transport

Not applicable

Rail transport

Not applicable

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

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

Reference code	Applicable on
3(a)	Ethanol ; Ethanol
3(b)	Ethanol ; Ethanol
40.	Ethanol ; Ethanol

Ethanol is not on the REACH Candidate List

Ethanol is not on the REACH Annex XIV List

Ethanol max. 24% vol. is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Ethanol max. 24% vol. is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

VOC content : 175 – 190 g/l

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:

CAS-No.	Chemical Abstract Service number
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
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)

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DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
IOELV	Indicative Occupational Exposure Limit Value
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
N.O.S.	Not Otherwise Specified
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TRGS	Technical Rules for Hazardous Substances
SDS	Safety Data Sheet
VOC	Volatile Organic Compounds
WGK	Water Hazard Class
vPvB	Very Persistent and Very Bioaccumulative

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

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 EU (REACH Annex II)

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.