

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.11.2021

Revision: 24.11.2021

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

· 1.1 Product identifier

· **Trade name:** Molecular Biology Grade Ethanol.(Absolute 100% ABV)

· **Article number:** 40-1736-05

· **CAS Number:**

64-17-5

· **EC number:**

200-578-6

· **Index number:**

603-002-00-5

· **Registration number** 01-2119457610-43

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

· **Product category**

PC1 Adhesives, sealants

PC2 Adsorbents

PC3 Air care products

PC4 Anti-Freeze and de-icing products

PC8 Biocidal products

PC9a Coatings and paints, thinners, paint removers

PC9c Finger paints

PC12 Fertilisers

PC13 Fuels

PC14 Metal surface treatment products

PC15 Non-metal-surface treatment products

PC16 Heat transfer fluids

PC17 Hydraulic fluids

PC18 Ink and toners

PC21 Laboratory chemicals

PC23 Leather treatment products

PC24 Lubricants, greases, release products

PC27 Plant protection products

PC28 Perfumes, fragrances

PC29 Pharmaceuticals

PC30 Photo-chemicals

PC31 Polishes and wax blends

PC34 Textile dyes, and impregnating products

PC35 Washing and cleaning products (including solvent based products)

PC39 Cosmetics, personal care products

· **Application of the substance / the mixture**

The substance has may industrial, professional and consumer applications.

· **Uses advised against**

Processes involving extreme heat use advised against.

Processes involving the use of incompatible substances - refer to section 10.

Any use carrying a risk of direct contact with eyes/skin where workers are exposed without adequate personal protective equipment (PPE).

Any use involving aerosol formation or vapour or dust release in excess of the assigned workplace exposure limits where workers are exposed without suitable respiratory protective equipment (RPE).

Processes where workers who may be pregnant or breastfeeding could potentially come into direct contact with the undiluted product.

The product is intended exclusively for industrial and professional use.

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Severn Biotech Ltd.

Unit 2,

Park Lane,

Kidderminster,

Worcestershire.

DY11 6TJ

UK

Tel: 0044 1562 825286

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Fax: 0044 1562 825284
email: info@severnbiotech.com

- **Further information obtainable from:** Product safety department.
- **1.4 Emergency telephone number:**
UK National Poisons Information Service. E-mail: npis.birmingham@nhs.net; Tel: +44 (0)344 892 0111

SECTION 2: Hazards identification

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



flame

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 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 smoking.

P260 Do not breathe mist/vapours/spray.

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.

P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.

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 Chemical characterisation: Substances**

- **CAS No. Description**

64-17-5 Ethanol

- **Identification number(s)**

- **EC number:** 200-578-6

- **Index number:** 603-002-00-5

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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately rinse with water.
If skin irritation continues, consult a doctor.
- **After eye contact:**
DO NOT DELAY!
Check for and remove any contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Information for doctor:** Treat symptomatically and supportively.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **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** Flammable liquid and vapour.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Be aware of possibility of re-ignition.
This product gives off flammable vapours which may form explosive mixtures with air.
Vapours with a source of ignition can create a flash fire, not a UVCE (Unconfined Vapour Cloud Explosion).
Run off to sewer may cause fire or explosion hazard
Containers may explode in heat of fire. Use water to cool fire-exposed containers and to disperse vapour.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
Keep ignition sources away - no smoking.
Wear protective equipment. Keep unprotected persons away.
Eliminate all sources of ignition.
Wear appropriate protective clothing.
Avoid breathing vapours.
Keep unnecessary people away; isolate hazard area and deny entry.
Consider need for evacuation.
Stay up wind and keep out of low areas where vapour may accumulate and ignite.
Stop leak if this can be achieved without risk.
For small spills take up with a non-combustible absorbant.
For large spills, dike or dam for later disposal.

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· **6.2 Environmental precautions:**

- Do not allow to penetrate the ground/soil.
- Do not allow product to reach sewage system or any water course in the undiluted form.

· **6.3 Methods and material for containment and cleaning up:**

- Ensure adequate ventilation.
- SMALL SPILLS: Allow to evaporate if it is safe to do so or contain and absorb using earth, sand or other inert material then transfer into suitable containers for recovery or disposal. Ventilate contaminated area thoroughly.
- LARGE SPILLS: Dike or dam to contain for later disposal. Contact emergency authorities.

· **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**

- Conduct maintenance and other work on or in storage/reactor/mixing vessels or closed spaces ONLY under strict Permit to Work conditions.
- Welding and other hot work operations in the work area must only be permitted under supervision.
- Prevent formation of aerosols.
- Ensure good ventilation/exhaustion at the workplace.
- Keep away from heat and direct sunlight.
- Avoid direct contact (skin/eye contact, ingestion and/or inhalation of fume/mist/dust) with the product in the undiluted form.
- Suitable equipment for dealing with fires, spills and leaks must be readily available.
- Earth all equipment. Use explosion protected electrical equipment and lighting.
- Do not smoke eat or drink in areas of use and storage.
- Use closed-system transfers wherever possible.
- Earth (ground) lines and equipment used during transfer to reduce possibility of static spark initiated fire or explosion

· **Information about fire - and explosion protection:**

- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.
- Flash point: 13 °C
- Ignition temperature: 400 °C
- Temperature class: T2
- Max. exper. safe gap (MESG): 0.89 mm
- Explosion group: IIB
- Lower explosion limit:: 2.5 vol. %
- Upper explosion limit:: 13 vol. %
- Maximum explosion pressure: 8.4 bar
- Conductivity: 1,35 * 10 Exp -07 S/m. Temperature: 25 °C

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

- Store in a cool location.
- Storage area should be cool, dry, well ventilated, out of direct sunlight and separated from oxidants and strong mineral acids.
- Store in original containers.
- Store away from sources of heat or ignition.
- Storage tanks should have equipotential electrical bonding and be earthed. Storage should be closed.

Incompatible materials: natural rubber, PVC, methyl-methacrylate plastics, polyamides, zinc, brass, aluminium under certain conditions.

Compatible materials: Stainless steel, titanium, cast bronze, cast iron, carbon steel, polypropylene, neoprene, nylon, viton, ceramic, carbon, glass.

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- **Information about storage in one common storage facility:**
 - Store away from oxidising agents.
 - Do not store together with acids.
- **Further information about storage conditions:**
 - Store in a bunded area.
 - Store in a cool place. Heat will increase pressure and may lead to the receptacle bursting.
 - Keep container tightly sealed.
 - 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

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

Ingredients with limit values that require monitoring at the workplace:
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64-17-5 Ethanol

WEL	Long-term value: 1920 mg/m ³ , 1000 ppm
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- **DNELs**
 - WORKERS**
 - Long-term exposure - systemic effects
 - Inhalation DN(M)EL
 - DNEL (Derived No Effect Level): 950 mg/m³
 - Workers - Hazard via dermal route
 - Systemic effects
 - Long term exposure
 - DNEL (Derived No Effect Level): 343 mg/kg bw/day
 - GENERAL POPULATION**
 - Long-term exposure - systemic effects
 - Inhalation DN(M)EL
 - DNEL (Derived No Effect Level): 114 mg/m³
 - General Population - Hazard via dermal route
 - Systemic effects
 - Long term exposure
 - DNEL (Derived No Effect Level): 206 mg/kg bw/day
 - General Population - Hazard via oral route
 - Systemic effects
 - Long term exposure
 - DNEL (Derived No Effect Level): 87 mg/kg bw/day
 - **PNECs**
 - PNEC aqua (freshwater): 0.96 mg/L
 - PNEC aqua (marine water): 0.79 mg/L
 - PNEC STP: 580 mg/L
 - PNEC sediment (freshwater): 3.6 mg/kg sediment dw
 - PNEC sediment (marine water): 2.9
 - PNEC soil: 0.63 mg/kg soil dw
 - PNEC oral: 0.72 g/kg food
 - **Additional information:** The lists valid during the making were used as basis.
 - **8.2 Exposure controls**
 - **Personal protective equipment:**
 - **General protective and hygienic measures:**
 - Avoid contact with the eyes.
 - Avoid close or long term contact with the skin.
 - Do not inhale gases / fumes / aerosols.
 - Do not eat, drink, smoke or sniff while working.

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A safe system of work must be formulated and followed to ensure safe working with this product. Relevant workers must receive suitable and sufficient training and supervision.

Take note of assigned Workplace Exposure Limits.

Wash hands before breaks and at the end of work.

Pregnant women should strictly avoid inhalation or skin contact.

Ensure that eyewash stations and safety showers are close to the workstation location.

A safe system of work must be formulated and followed to ensure that workers who may be pregnant or breastfeeding do not come into direct contact with the product.

· **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

· **Protection of hands:**

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.

Wear gloves with breakthrough times >480 minutes: Nitrile rubber gloves. Butyl rubber gloves.(complying to EN 374-3)

· **Penetration time of glove material**

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

· **Eye protection:**



Tightly sealed goggles

· **Body protection:**

Solvent resistant protective clothing

Body protection must be chosen depending on product properties, activity and possible exposure.

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Fluid

Colour: Colourless

· **Odour:** Alcohol-like

· **Odour threshold:** Not determined.

· **pH-value (10 g/l) at 20 °C:** 7

· **Change in condition**

Melting point/freezing point: -114 °C

Initial boiling point and boiling range: 78 °C

· **Flash point:** 13 °C

· **Flammability (solid, gas):** Not applicable.

· **Ignition temperature:** >350 °C

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

Lower: 2.5 Vol %

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Upper:	13 Vol %
· Vapour pressure at 20 °C:	59 hPa
· Density at 20 °C:	0.79 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient: n-octanol/water:	-0.35 log POW
· Viscosity:	
Dynamic at 20 °C:	1.2 mPas
Kinematic:	Not determined.
· 9.2 Other information	NOTE: The physical data presented above are typical values and should not be construed as a specification.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions**
Forms explosive gas mixture with air.
Reacts slowly with calcium hypochlorite, silver oxide and ammonia. This generates fire and explosion hazard.
Reacts violently with strong oxidants such as nitric acid, silver nitrate, mercuric nitrate and magnesium perchlorate. This generates fire and explosion hazard.

Risk of explosion in contact with: chlorine; strong oxidizing agents; nitric acid; calcium hypochlorite; halogene oxides; disulphur difluoride; acetic anhydride + salts + acids; isocyanates; potassium; potassium dioxide; potassium permanganate/sulphuric acid; sodium; sodium hypochlorite; sodium peroxide; perchlorates; peracids; perchloro nitrile; mercury nitrate; oxygen (liquid); sulphuric acid + hydrogen peroxide; silver/nitric acid; silver nitrate; silver nitrate/ammonia; silver oxide/ammonia; nitrogen dioxide; hydrogen peroxide, conc.
- The substance can react dangerously with: alkali/alkaline earth metals; fluorine; reducing agents; acetylene bromide; acetylene chloride; barium perchlorate; bromine trifluoride; caesium oxide; chromium trioxide; chromyl chloride; oxiran; iodine heptafluoride; potassium tert.-butoxide; lithium hydride; phosphorus trioxide; platinum black; nitric acid/potassium permanganate; acid anhydrides; acids; uranium hexafluoride; zirconium(IV)-chloride; zirconium(IV)-iodid
- **10.4 Conditions to avoid** Aluminium at higher temperatures.
- **10.5 Incompatible materials:** Strong acids and oxidising agents
- **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

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:

Oral	LD50	>10000 mg/kg (rat)
Dermal	LD50	>10000 mg/kg (rabbit)
Inhalative	LC50/4 h	>100 mg/l (rat)

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- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **Subacute to chronic toxicity:**
Effects of long-term or repeated exposure: The liquid defats the skin. The substance may have effects on the upper respiratory tract and central nervous system. This may result in irritation, headache, fatigue and lack of concentration.
Ethanol consumption during pregnancy may adversely affect the unborn child.
Chronic ingestion of ethanol may cause liver cirrhosis.
- **Additional toxicological information:**

Routes of exposure: The substance can be absorbed into the body by inhalation of its vapour and by ingestion.
Inhalation risk: A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20 degs.C.

Effects of short-term exposure: The substance is irritating to the eyes. Inhalation of high concentrations of the vapour may cause irritation of the eyes and respiratory tract. The substance may cause effects on the central nervous system.
- **CMR effects (carcinogenicity, 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:**

EC50	454 mg/kg (daphnia)
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- **12.2 Persistence and degradability** Easily biodegradable
- **12.3 Bioaccumulative potential** Product is not expected to bioaccumulate.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): 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.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**
Recommended Hierarchy of Controls:
 - Minimise waste;
 - Reuse if not contaminated;
 - Recycle, if possible; or
 - Safe disposal (if all else fails).
- Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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Contact waste processors for recycling information.

Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.

· **Uncleaned packaging:**

· **Recommendation:**

Disposal must be made according to official regulations.

Container remains hazardous when empty. Continue to observe all precautions.

Containers, even those that are "empty," may contain residues that can develop flammable and/or hazardous vapours upon heating. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Do not mix with other waste streams.

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

SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN1170

· **14.2 UN proper shipping name**

· **ADR**

1170 ETHANOL (ETHYL ALCOHOL)

· **IMDG**

ETHANOL (ETHYL ALCOHOL)

· **IATA**

ETHANOL

· **14.3 Transport hazard class(es)**

· **ADR, IMDG, IATA**



· **Class**

3 Flammable liquids.

· **Label**

3

· **14.4 Packing group**

· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards:**

· **Marine pollutant:**

No

· **14.6 Special precautions for user**

Warning: Flammable liquids.

· **Hazard identification number (Kemler code):**

33

· **EMS Number:**

F-E,S-D

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

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)**

1L

· **Transport category**

2

· **Tunnel restriction code**

D/E

· **UN "Model Regulation":**

UN1170, ETHANOL (ETHYL ALCOHOL), 3, II

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SECTION 15: Regulatory information

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

- Directive 2012/18/EU
- 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
- National regulations:
- Information about limitation of use:

Class	Share in %
NK	100.0

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not 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:**

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)
 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

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