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

Printing date 28.02.2013 Revision: 28.02.2013

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

· **Product identifier**

· **Trade name: 100% Ethanol (Absolute)**

· **Article number:** 40-1705-10
· **CAS Number:**
64-17-5
· **EC number:**
200-578-6
· **Index number:**
603-002-00-5
· **Registration number** 01-2119457610-43
· **Relevant identified uses of the substance or mixture and uses advised against**
Use as an intermediate or process chemical; Industrial use of ethanol as a fuel source; Industrial use of ethanol as a fuel source; Industrial (end) use of ethanol as such or in preparations in non-spray application; Industrial (end) use of ethanol as such or in preparations by spraying; Industrial and professional (end) use of ethanol as a heat transfer fluid; Manufacture or use as an intermediate or process chemical; Coatings; Cleaning; Functional fluids; Use in laboratories; Industrial use as wastewater treatment chemical; Detergent and cleaner use (spray and non-spray); Use in coatings, inks, adhesives; Professional application of paints, coatings, adhesives, cleaners and other mixtures/products containing ethanol by spraying; De-icing and anti-icing applications; Explosives manufacture and distribution; Professional use in oilfield drilling and production operations; Use in deicers, screenwash; Use in coating, inks, adhesives; Health Care Professionals; Lubricants; Agrochemicals; as bio-fuel; Consumer use of automotive fuels containing ethanol; Consumer use of domestic fuel products containing ethanol; Consumer use of products containing <50g ethanol; Consumer use of products containing <50g ethanol; Consumer use of ethanol in coatings and paint products; Consumer use of ethanol in antifreeze, deicing and screenwash products; Consumer use of ethanol in washing and cleaning products; Consumer use of fuels indoors (Domestic/hobby use e.g in model engines, fuel cells, fondue sets); Patient use.
· **Sector of Use**
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU8 Manufacture of bulk, large scale chemicals (including petroleum products)
SU9 Manufacture of fine chemicals
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
SU20 Health services
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
· **Product category**
PC1 Adhesives, sealants
PC2 Adsorbents
PC3 Air care products
PC4 Anti-Freeze and de-icing products
PC8 Biocidal products (e.g. Disinfectants, pest control)
PC9a Coatings and paints, thinners, paint removers
PC9c Finger paints
PC12 Fertilizers
PC13 Fuels
PC14 Metal surface treatment products, including galvanic and electroplating products
PC15 Non-metal-surface treatment products
PC16 Heat transfer fluids
PC17 Hydraulic fluids
PC18 Ink and toners
PC21 Laboratory chemicals
PC23 Leather tanning, dye, finishing, impregnation and care 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, finishing and impregnating products; including bleaches and other processing aids
PC35 Washing and cleaning products (including solvent based products)
PC39 Cosmetics, personal care products

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· **Process category**
PROC0: Other
PROC1 Use in closed process, no likelihood of exposure
PROC2 Use in closed, continuous process with occasional controlled exposure
PROC3 Use in closed batch process (synthesis or formulation)
PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7 Industrial spraying
PROC8a Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC8b Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC11 Non industrial spraying
PROC13 Treatment of articles by dipping and pouring
PROC14 Production of preparations or articles by tabletting, compression, extrusion, pelletisation
PROC15 Use as laboratory reagent
PROC16 Using material as fuel sources, limited exposure to unburned product to be expected
PROC19 Hand-mixing with intimate contact and only PPE available
PROC20 Heat and pressure transfer fluids in dispersive, professional use but closed systems
· **Environmental release category**
ERC1 Manufacture of substances
ERC2 Formulation of preparations
ERC3 Formulation in materials
ERC4 Industrial use of processing aids in processes and products, not becoming part of articles
ERC5 Industrial use resulting in inclusion into or onto a matrix
ERC6a Industrial use resulting in manufacture of another substance (use of intermediates)
ERC6b Industrial use of reactive processing aids
ERC6c Industrial use of monomers for manufacture of thermo-plastics
ERC6d Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers
ERC7 Industrial use of substances in closed systems
ERC8a Wide dispersive indoor use of processing aids in open systems
ERC8b Wide dispersive indoor use of reactive substances in open systems
ERC8c Wide dispersive indoor use resulting in inclusion into or onto a matrix
ERC8d Wide dispersive outdoor use of processing aids in open systems
ERC8e Wide dispersive outdoor use of reactive substances in open systems
ERC9a Wide dispersive indoor use of substances in closed systems
ERC9b Wide dispersive outdoor use of substances in closed systems
ERC12b Industrial processing of articles with abrasive techniques (high release)
· **Article category** AC0 Other
· **Application of the substance / the preparation**
The substance has may industrial, professional and consumer applications.

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

· **Further information obtainable from:** Product safety department.

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· **Emergency telephone number:** Tel: 0044 1562 825286 (not 24 hours)

2 Hazards identification

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

GHS02 flame

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

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

F; Highly flammable

R11: Highly flammable.
· **Information concerning particular hazards for human and environment:** Not applicable.

· **Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
· **Hazard pictograms** GHS02
· **Signal word** Danger
· **Hazard statements**
H225 Highly flammable liquid and vapour.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P370+P378 In case of fire: Use for extinction: CO_2, powder or water spray.
P403+P235 Store in a well-ventilated place. Keep cool.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

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

4 First aid measures

· **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.
· **After eye contact:**
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.

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· **Information for doctor:** Treat symptomatically and supportively.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** Flammable liquid and vapour.
· **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 creat 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.

6 Accidental release measures

· **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.
· **Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Do not allow to penetrate the ground/soil.
· **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.
· **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.

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Prevent formation of aerosols.
Ensure good ventilation/exhaustion at the workplace.
Keep away from heat and direct sunlight.
Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product.
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.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
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.
· **Information about storage in one common storage facility:**
Store away from oxidizing 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.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **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**
WORKERS
Acute / short-term exposure - local effects
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 1900 mg/m³

Long-term exposure - systemic effects
Dermal DN(M)EL

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- DNEL (Derived No Effect Level): 343 mg/kg bw/day

Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 950 mg/m³

GENERAL POPULATION
Acute / short-term exposure - local effects
Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 950 mg/m³

Long-term exposure - systemic effects
Dermal DN(M)EL
- DNEL (Derived No Effect Level): 206 mg/kg bw/day

Inhalation DN(M)EL
- DNEL (Derived No Effect Level): 114 mg/m³

Oral DN(M)EL
- 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 aqua (intermittent releases): 2.75 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.

· **Exposure controls**
· **Personal protective equipment:**
Select PPE appropriate for the operations taking place taking into account the product properties.
· **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.
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:**
In case of insufficient local exhaust ventilation and/or handling with open equipment: Respiratory air fed breathing apparatus if there is a risk of exposure to high vapour concentrations. If using a half mask: organic vapour catridge Ax type.
· **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)

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· **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

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Colour:	Colourless
· **Odour:**	Alcohol-like
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	-114 °C
Boiling point/Boiling range:	78 °C
· **Flash point:**	13 °C
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	>350 °C
· **Decomposition temperature:**	Not determined.
· **Self-igniting:**	Not determined.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· **Explosion limits:**	
Lower:	2.5 Vol %
Upper:	13 Vol %
· **Vapour pressure at 20 °C:**	59 hPa
· **Density at 20 °C:**	0.79 g/cm³
· **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.
· **Other information**	No further relevant information available.

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10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **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.
· **Conditions to avoid** Aluminium at higher temperatures.
· **Incompatible materials:** Strong acids and oxidising agents
· **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **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)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **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.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
EC50	454 mg/kg (daphnia)

· **Persistence and degradability** biodegradable
· **Behaviour in environmental systems:**
· **Bioaccumulative potential** Product is not expected to bioaccumulate.
· **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

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Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **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.
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.
· **European waste catalogue**
Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

· **Uncleaned packaging:**
· **Recommendation:**
Disposal must be made according to official regulations.
Container remains hazardous when empty. Continue to observe all precuations.
Do not mix with other waste streams.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

· **UN-Number**	
· **ADR, IMDG, IATA**	UN1170
· **UN proper shipping name**	
· **ADR**	1170 ETHANOL (ETHYL ALCOHOL)
· **IMDG**	ETHANOL (ETHYL ALCOHOL)
· **IATA**	ETHANOL
· **Transport hazard class(es)**	
· **ADR, IMDG, IATA**	

· **Class**	3 Flammable liquids.
· **Label**	3
· **Packing group**	
· **ADR, IMDG, IATA**	II
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids.
· **Danger code (Kemler):**	33

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· **EMS Number:**	F-E,S-D
· **Transport in bulk according to Annex II of MARPOL73/78 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

15 Regulatory information

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

· **National regulations:**

Class	Share in %
NK	100.0

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.