Safety Data Sheet

SDS has been prepared in accordance with
Regulation (EC) No. 453/2010

This Safety Data Sheet is written in reference to a sealed glass ampoule containing 10 ml of the product named below.

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

1.1 Product identifier

Mixture name: Ethanol in water (for solutions containing ~9% to ~11% abv)

Synonyms:	**Product type:**	**Date revised:** Jun 2022
Ethyl alcohol Alcohol	Liquid density standard	**Previous:** Feb 2020

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

Relevant identified uses: For use in the calibration of density meters.

1.3 Details of the supplier of the Safety Data Sheet

Company: H&D Fitzgerald Ltd.

Address: Cefn Du, Tremeirchion, St Asaph, Denbighshire, LL17 0US, UK

Telephone #: +44 (0)1352 720 774

Email address: admin@density.co.uk

1.4 Emergency telephone number

+44 (0)1352 720 774

Section 2 Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No1272/2008 [CLP]:

Not classified.

2.2 Label elements None.

2.3 Other hazards None.

Section 3 Composition / Information on ingredients

Substance name	C.A.S. No.	EINECS No.	Index-No. in CLP Annex IV	Classification	Concentration
Water	7732-18-5	231-791-2	-	Not classified	~91% to ~89%
Ethanol	64-17-5	200-578-6	603-002-00-5	Flam. Liq. 2; Eye Irrit.2; H225, H319	~9% to ~11%

Formula:	H_2O (water)	C_2H_6O (ethanol)
Molecular Weight:	18.02 g/mol (water)	46.07 g/mol (ethanol)

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4 First Aid measures

4.1 Description of first aid measures

General advice:	Consult a physician. Show this safety data sheet to the doctor in attendance.
Following inhalation:	Move the person into fresh air. If not breathing give artificial respiration. Consult a physician.
Following ingestion:	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth with water. Consult a physician if symptoms develop.
Following eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician if symptoms develop.
Following skin contact:	Wash off with soap and plenty of water. Consult a physician if symptoms develop.

4.2 Most important symptoms and effects, both acute and delayed

Following inhalation:	Respiratory tract irritation.
Following ingestion:	May cause dizziness and/or drowsiness.
Following eye contact:	May cause eye irritation.
Following skin contact:	Use of protective clothing is good industrial practise.
Delayed effects:	Repeated ingestion may cause liver injury.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

Section 5 Fire fighting measures

5.1 Extinguishing media

Extinguishing media:	Use extinguishing media appropriate for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:	No data available.

5.3 Advice for firefighters

Special protective equipment for fire-fighters:	No data available.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Protective equipment:	Wear safety glasses with side shields.
Personal precautions:	Use personal protective equipment. Ensure adequate ventilation.

6.2 Environmental precautions

None required for small quantities.

6.3 Methods and material for containment and cleaning up

Ventilate area. Soak up liquid with inert absorbent material and dispose of according to local authority requirements.

Section 7 Handling and storage

7.1 Precautions for safe handling

Handling precautions: Use personal protective equipment.
Handle in accordance with good industrial hygiene and safety practise.
Normal measures for prevention of fire.

7.2 Conditions for safe storage, including any incompatibilities

Storage precautions: Store ampoule in the outer packaging until ready to use.
Store in a cool place (less than 25°C).
Do not store the ampoule once opened, dispose of according to local authority requirements.

7.3 Specific end use

Recommendations: Liquid density standard for calibration of density meters.

Section 8 Exposure controls and personal protection

8.1 Control parameters

Components with work place control parameters

Components	CAS-No.	Value	Control Parameters	Basis
Ethanol	64-17-5	TWA	1000 ppm 1,920 mg/m³	UK. EH40 WEL - Workplace Exposure Limits
	Remarks	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.		

Derived No Effect Level (DNEL) - 100% ethanol

Application area	Exposure routes	Value	Health effect
Workers	Inhalation	950 mg/m³	Long-term systemic effects
Workers	Skin contact	343 mg/kg BW/d	Long-term systemic effects
Workers	Ingestion	343 mg/kg BW/d	Long-term systemic effects
Workers	Inhalation	1900 mg/m³	Acute local effects

Predicted No Effect Concentration (PNEC) - 100% ethanol

Compartment	Value
Soil	0.63 mg/kg
Marine water	0.79 mg/l
Fresh water	0.96 mg/l
Fresh water sediment	3.6 mg/l
Sewage treatment plant	580 mg/l

8.2 Exposure controls

Personal protective equipment

Eye/Face protection: Wear safety glasses with side shields conforming to EN166

Hand/skin protection: Use of protective clothing is good industrial practise.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practise.
Wash hands with soap before breaks and at the end of the workday.

Environmental exposure controls

None required for small quantities.

Section 9 Physical and chemical properties			
9.1 Information on basic physical and chemical properties			
Appearance: Colourless, liquid	**Odour:** alcohol-like	**Odour threshold:** no data available	**pH:** 6.9
Freezing point: −22°C	**Boiling point & range:** ~ 82°C	**Flash point:** not applicable	**Evaporation rate:** no data available
Flammability: no data available	**Upper/lower flammability or explosive limits:** no data available	**Vapour pressure:** 25.3 hPa at 25°C 17.3 hPa at 20°C	**Vapour density:** no data available
Density of liquid: ≈ 984 kgm^{-3} at 25°C	**Solubility:** completely soluble in water	**Partition coefficient: n-octanol/water** log Pow: -0.349 at 24 °C (100% ethanol)	**Auto-ignition temperature:** no data available
Decomposition temperature: no data available	**Viscosity:** no data available	**Explosive properties:** not applicable	**Oxidising properties:** no data available
9.2 Other information	No data available.		

Section 10 Stability and reactivity	
10.1 Reactivity	Stable under recommended storage conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No data available.
10.4 Conditions to avoid	Heat, flames, sparks, and other sources of ignition. Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Strong oxidising agents.
10.6 Hazardous decomposition products	Formation of toxic gases may be possible during heating or in case of fire.

Section 11 Toxicological information	
Low concentration ethanol in water (~9% to ~11% abv) solution is unlikely to present any toxicological risk in the quantity supplied in a 10 ml ampoule.	
11.1 Information on toxicological effects	
Acute toxicity - 100% ethanol	
Inhalation:	LC_{50}(rat): 30,000 mg/l - 4 hr. **(100% ethanol)**
Ingestion:	LD_{50}(rat): 10,470 mg/kg **(100% ethanol)**
Skin corrosion/irritation:	LD_{50}(rabbit) 15,800 mg/kg. **(100% ethanol)** Rabbit - No skin irritation - 24h (OECD Test Guideline 404) **(100% ethanol)**
Serious eye damage/ irritation:	Rabbit – Moderate eye irritation (OECD Test Guideline 405) **(100% ethanol)**
Germ cell mutagenicity:	No data available.
Carcinogenicity:	Carcinogenicity - Mouse - Oral. Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors. Blood:Lymphomas including Hodgkin's disease. **(100% ethanol)** IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity:	Reproductive toxicity – Human – female – Oral **(100% ethanol)** Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.
Specific target organ toxicity – single exposure:	No data available.
Specific target organ toxicity – repeated exposure:	No data available.
Aspiration hazard:	No data available
Additional information:	RTECS: KQ6300000 **(100% ethanol)**

Section 12 Ecological information

Toxic to aquatic organisms **(100% ethanol)**.

Low concentration ethanol in water (~9% to ~11% abv) solution is unlikely to present any ecological risk in the quantity supplied in a 10 ml ampoule.

12.1 Toxicity - 100% ethanol	
Toxicity to fish:	LC_{50} – Pimephales promelas (fathead minnow) – 14,200 mg/l – 96 h **(100% ethanol)**
Toxicity to daphnia and other aquatic invertebrates:	LC_{50} – Ceriodaphnia dubia (water flea) – 5,012 mg/l – 48 h NOEC – Daphnia magna (Water flea) – 9.6 mg/l – 9 d **(100% ethanol)**
Toxicity to algae:	EC_{50} – Chlorella vulgaris (Fresh water algae) – 275 mg/l – 72 h (OECD Test Guideline 201) **(100% ethanol)**
12.2 Persistence and degradability	
Biodegradability:	Result: 95 % - Readily biodegradable **(100% ethanol)**
12.3 Bioaccumulative potential	
	Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected. **(100% ethanol)**
12.4 Mobility in soil	No data available.
12.5 Results of PBT and vPvB assessment	
	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Other adverse effects	No data available.

Section 13 Disposal considerations

General requirements:	Observe all national and local environmental regulations.
For small quantities:	Mop up with inert material and dispose of according to local authority requirements.
Contaminated packaging:	Dispose of as unused product.

Section 14 Transport information

Not classified as dangerous for transport.

Section 15 Regulatory information	
15.1 Safety health and environmental regulations/legislation specific for the substance or mixture	
	This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010.
15.2 Chemical safety assessment	
	No chemical assessment has been carried out for this substance by the supplier.

Section 16 Other information	
Text of H-code(s) mentioned in Section 3 (100% ethanol only)	
H225	Highly flammable liquid and vapour **(100% ethanol)**
H319	Causes serious eye irritation **(100% ethanol)**
Reason for revision:	Updated to comply with Regulation (EC) No. 453/2010.

Disclaimer

H&D Fitzgerald Ltd believes that data given here is accurate. It is derived from published information about ethanol. No warranty, expressed or implied, is intended. The data is provided for your information and consideration when using low concentration ethanol in water (~9% to ~11% abv) solution as a liquid density standard for the calibration of density meters.H&D Fitzgerald Ltd assumes no legal responsibility for its use.