

1.0 IDENTIFICATION OF THE SUBSTANCE / MIXTURE

1.1 Product Identification

Substance	Denatured Ethanol
Commercial Product Name	Fuel Grade Ethanol (gasoline denatured)
Synonyms	Denatured Ethanol
CAS	64-17-5
EU REACH Registration No.	01-2119457610-43-0754

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

Specific Use(s)	Blend component for automotive gasoline
Exposure Scenarios	Exposure scenarios for ethanol
Uses Advised Against	
Chemical Safety Report	

1.3 Details of the supplier of the SDS

Company	Inver Energy Limited River House Blackpool Park Blackpool Cork, Ireland
Telephone No.	+353 (0)21 4396950
Email	inver@inverenergy.com

1.4 Emergency telephone number

Emergency telephone number	+44 1235 836 100	(NCEC)
Opening Hours	24/7	

2.0 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EU) 1272/2008

CLP-Classification: The product is classified as hazardous in accordance with Directive 1272/2008/EEC.

Flam. Liq. 2	H225 - Highly flammable liquid and vapour
Eye Irrit. 2	H319 - Causes serious eye irritation
Carc. 1B	H350 - May cause cancer
Mutagenic 1B	H340 - May cause genetic defects

2.2 Label elements

Labelling according to Regulation (EU) 1272/2008

CLP pictograms:



GHS02

Signal word: Danger

CLP Hazard statements: H225 - Highly flammable liquid and vapour
H319 - Causes serious eye irritation.
H350 - May cause cancer
H340 - May cause genetic defects

CLP Precautionary statements: P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Labelling according to Directives (67/548/EEC - 1999/45/EC)

Not relevant

Other Hazards

Other hazards: This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

3.0 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Substance name	Product Identifier	%	Classification according to Regulation (EC) No. 1272/2008 ICLP / GHS1
Ethanol	CAS no: 64-17-5 EC no: 200-578-6 EC Index: 603-002-00-5	98-99	H225 - Flam. Liq. 2 H319 - Causes serious eye irritation H350 – Carc. 1B H340 - Muta. 1B
Gasoline	CAS no: 86290-81-5 EC no: 289-220-8 EC Index: 649-378-00-4	1-2	H224 - Flam. Liq. 1 H315 - Skin Irrit. 2 H350 – Carc. 1B H340 - Muta. 1B H304 - Asp.Tox. 1 H336 - STOT SE 3 H411 - Aquatic Chronic 2 H361 - Repr. 2

4.0 FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation:	Keep at rest. Move to fresh air. Oxygen or artificial respiration if needed
Skin contact:	Wash off immediately with soap and plenty of water Take off contaminated clothing and shoes immediately Wash contaminated clothing before re-use
Eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Get immediate medical advice/attention
Ingestion:	Rinse mouth Drink plenty of water Get immediate medical advice/attention

4.2 Most important symptoms and effects, both acute and delayed

Inhalation:	May cause respiratory irritation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Skin contact:	Prolonged skin contact may cause skin irritation and/or dermatitis
Eye contact:	Contact with eyes may cause irritation
Ingestion:	Harmful: may cause lung damage if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea
Other adverse effects:	Carcinogenic Mutagenic

4.3 Indication of immediate medical attention and special treatment needed

No data available

5.0 FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Use dry chemical, CO₂, water spray or alcohol resistant foam

Extinguishing media which shall not be used for safety reasons: High volume water jet

5.2 Special hazards arising from the substance or mixture

Fire Hazard: Highly Flammable liquid and vapour

Specific hazards: Vapours may form explosive mixture with air
Vapours are heavier than air and may spread along floors
The pressure in sealed containers can increase under the influence of heat
Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode
Burning produces noxious and toxic fumes
Cool containers / tanks with water spray
Possible decomposition products are: CO
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations

5.3 Advice for firefighters

Special protective equipment for fire-fighters: Wear personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary

6.0 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Remove all sources of ignition. Evacuate area. Wear personal protective equipment. See also section 8. Do not breathe vapours or spray mist. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not smoke. Keep away from open flames, hot surfaces and sources of ignition. Ensure all equipment is electrically grounded before beginning transfer operations

6.2 Environmental precautions

Environmental precautions: Do not flush into surface water or sanitary sewer system

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up: Remove all sources of ignition. Do not use tools which may produce sparks. Prevent further leakage or spillage if safe to do so. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dam up. Sweep up and shovel into suitable containers for disposal. After cleaning, flush away traces with water. Dispose of in accordance with local regulations

7.0 HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling: Wear personal protective equipment. See also section 8 Do not breathe vapours or spray mist. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Keep away from open flames, hot surfaces and sources of ignition. Do not smoke. Keep away from food and drink. Always replace cap after use. Do not burn. Ensure all equipment is electrically grounded before beginning transfer operations

7.2 Conditions for safe storage, including any incompatibilities

Storage: Keep tightly closed in a dry, cool and well-ventilated place. Store in original container. Keep away from open flames, hot surfaces and sources of ignition. Keep away from direct sunlight. Do not store near or with any of the incompatible materials listed in section 10

Hygiene measures: Use only in area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling the product

7.3 Specific end use(s)

Specific use(s): No data

8.0 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Component: Ethanol (64-17-5)
TLV-TWA (mg/m³): 260 (NL); 950 (NO); 960 (DE, CH,SK); 1000 (SE, CS, ET, LT, BG, LV, RU); 1900 (DA, FR, FI, GR, AT, HU, SL, HR, PL); 1907 (BE); 1910 (ES); 1920 (GB); 1000 ppm (PT)

TLV-STEL (mg/m³): 1900 (LT, ET, NL, SE); 1920 (CH, SK, DE); 2500 (FI); 3000 (CS); 3800 (AT); 9500 (FR)

DNEL: No data

PNEC: No data

Component: Gasoline (86290-81-5)

TLV-TWA (ppm): 300 (CH, VLA-ED Spain, 2008)

TLV-TWA (mg/m³): 1100 (CH), 250 (UT4, Kraftstoff, DE); mist: 5 (BE, GB, FR, NL, ES, FI, DK, NO); mist:1 (SE);

TLV-STEL (mg/m³): mist: 10 (BE, GB); mist: 3 (SE)

8.2 Exposure controls

Respiratory protection: Ensure adequate ventilation
Not required under normal use
In case of insufficient ventilation wear suitable respiratory equipment
Full face mask (EN 136)
Respirator with a half face mask (EN 140)
Recommended Filter type: (type A - EN 141)

Hand protection:	Wear chemically resistant gloves tested for breakthrough time for Ethanol in accordance with EN374. The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves
Eye protection:	Safety glasses (EN 166)

9.0 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	liquid
Colour:	colourless
Odour:	alcohol-like
pH:	not applicable
Boiling point/boiling range:	ca 78 °C
Melting point/range:	<< 0°C
Flash point:	ca 12 °C
Auto-ignition temperature:	ca 425 °C
Explosive properties:	LEL ca 3.4%
Oxidizing properties:	not applicable
Evaporation rate:	ca 3.4
Vapour pressure:	ca 57.3 kPa @ 20°C
Vapour density:	ca 1.59
Solubility in other solvents:	miscible
Viscosity:	ca 1.2 mPa.s @ 20°C
Density:	ca 0.79 g/cm ³ @ 15°C
Partition coefficient:	for Ethanol ~ -0.32 (n-octanol/water)

9.2 Other information

No data available

10.0 STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity: Flammable liquid

10.2 Chemical stability

Stability: Stable under normal conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Conditions to avoid: Keep away from heat and sources of ignition. Exposure to sunlight

10.5 Incompatible materials

Incompatible materials: Oxidizing agent, Acids and bases

10.6 Hazardous decomposition products

Hazardous decomposition Products: Burning produces noxious and toxic fumes. Possible decomposition products are: COx

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

General Information

Acute toxicity

Component: Ethanol (64-17-5)

LD50/oral/rat: 1501 mg/kg

LC50 (inhalation/rat): >5.2 mg/l/4 h

LD50 (dermal/rabbit): >2000 mg/kg

Component: Gasoline (86290-81-5)

LD50/oral/rat: >5000 mg/kg (ARCO, 1986b)

LC50 (inhalation/rat): >5.2 mg/l/4 h (ARCO, 1992)

LD50 (dermal/rabbit): >2000 mg/kg (ARCO, 1986a)

Inhalation: Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Skin contact: Prolonged skin contact may cause skin irritation and/or dermatitis

Eye contact: Contact with eyes may cause irritation

Ingestion: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea

Chronic toxicity:

Germ cell mutagenicity: May cause genetic defects

Carcinogenicity: May cause cancer

Further information

No data available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Ecotoxicity effects: Not hazardous

Component: Ethanol (64-17-5)

LC50/96h/fish: 14,200 mg/l (Pimephales promelas)

Component: Gasoline (86290-81-5)

LC50/96h/fish: 1 - 10 mg/l (Rainbow trout)

12.2 Persistence and degradability

Persistence and degradability: Readily biodegradable

12.3 Bioaccumulative potential

Bioaccumulation: (ethanol) log Pow = -0,32
(gasoline) log Kow = ≥ 3

12.4 Mobility in soil

Mobility: Miscible

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

No data available

13.0 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste from residues / unused products: Dispose of in accordance with local and national regulations. Where possible, recycling is preferred to disposal or incineration. Do not burn, or use a cutting torch on, the empty drum. Do not puncture or incinerate. Do not allow to enter into surface water or drains

Contaminated packaging: Do not puncture or incinerate. Do not burn, or use a cutting torch on, the empty drum. Never use pressure to empty container. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Codes of waste (2001/573/EC, 75/442/EEC, 91/689/EEC): The following Waste Codes are only suggestions:
130703 - other fuels (including mixtures)
Waste codes should be assigned by the user based on the application for which the product was used

14. TRANSPORT INFORMATION

14.1 UN Number

UN number : 3475

14.2 UN proper shipping name

Proper shipping name : ETHANOL AND GASOLINE MIXTURE

14.3 Transport hazard class(es)

14.3.1 Overland transport

Class: 3 - Flammable liquids
 Danger code: 33
 ADR classification code: F1
 ADR danger labels: 3 - Flammable liquid



Orange plates:



ADR tunnel restriction code: D/E
 limited quantities: LQ04
 ADR excepted quantities: E2

Inland waterway transport (ADN/ADNR)

ADNR class: 3

14.3.2 Transport by sea

Class: 3 - Flammable liquids

14.3.3 Air transport

Class: 3 - Flammable liquids

14.4 Packing group

Packing group: II

14.5 Environmental hazards

Other information (transport): No supplementary information available

14.6 Special precautions for users

No data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Bio-fuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume) Pollution Category: X

Hazards: S/P

Ship Type: 2

15.0 REGULATORY INFORMATION

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

15.1.1 EU-Regulations

No data available

15.1. National regulations

DE WGK: 3

15.2 Chemical Safety Assessment

Chemical Safety assessment: A Chemical Safety Assessment has been carried out for the following substances for this mixture:
Ethanol
Gasoline

16.0 OTHER INFORMATION

- (1) Version 1.0, aligned with existing version 5.0 of UK Ethanol SDS
- (2) The contents and format of this SDS are in accordance with the ECHA Guidance on the compilation of safety data sheets, version 4.0 December 2020 ECHA-20-H-25-EN
- (3) Data used in this SDS has been sourced from the ECHA disseminated REACH dossier information for Gasoline EC 289-220-8 and Ethanol EC 200-578-6
- (4) List of Abbreviations:

SDS	Safety Data Sheet
ECHA	European Chemicals Agency
CLP	Classification, Labelling and Packaging Regs.
GHS	Globally Harmonised System [of classification]
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation and Authorisation of Chemicals
ADR	Agreement for the transportation of dangerous goods by road
ADN	International Carriage of Dangerous Goods by Inland Waterways
RID	International Carriage of Dangerous Goods by Rail
PBT	Persistent, Bio-accumulative and Toxic
vPvB	Very Persistent and very Bio-accumulative
PCA	Passenger Carrying Aircraft
CAO	Cargo Aircraft Only
STOT	Single Target Organ Toxicity
IBC	International Bulk Chemical code
LEL	Lower Explosive Limit
UEL	Upper Explosive Limit
UVCB	Unknown or Variable Composition or Biological origin

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