SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 *Product identifiers*

Product name: **Ethanol**

CAS-No.: **64-17-5**

Product Number: **R07143**

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

Identified uses: Laboratory chemicals, Manufacture of substances

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

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR, UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 *Emergency telephone number*

Emergency Phone #: **+44 (0)845 1200 506**

2. HAZARDS IDENTIFICATION

2.1 *Classification of the substance or mixture*

According to Regulation (EC) No1272/2008; Flammable liquids (Category 2), Specific target organ toxicity - single exposure (Category 2)

2.2 *Label elements*

Labelling according to Regulation (EC) No 1272/2008

Pictogramm

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour
H371	May cause damage to organs (Eyes)

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

2.3 *Other hazards* – no data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 *Substances*

Synonyms: Ethyl alcohol, UK Industrial Denatured Alcohol, (74 OP)

Formula: CH_3CH_2OH

Molecular Weight: **46.07**

CAS-No.: **64-17-5**

EC-No.: **200-578-6**

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

Methanol

CAS-No.: **67-56-1**

EC-No.: **200-659-6**

Index-No.: **603-001-00-X**

3.2 *Mixtures*

Component	Classification	Concentration
Methanol	X Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301, H311, H331, H370 F, T, R11 - R23/24/25 - R39/23/24/25	4.8 %
Ethanol	Flam. Liq. 2; H225 F, R11	95.2 %

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.

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact: Wash off with soap and plenty of water. Take victim immediately to hospital.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes.

If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 *Most important symptoms and effects, both acute and delayed:* no data available

4.3 *Indication of immediate medical attention and special treatment needed:* no data available

5. FIRE-FIGHTING MEASURES

5.1 *Extinguishing media*

Suitable extinguishing media: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large

quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

5.2 ***Special hazards arising from the substance or mixture:*** no data available

5.3 ***Precautions for fire-fighters:*** Wear self contained breathing apparatus for fire fighting if necessary.

5.4 ***Further information:*** Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 ***Personal precautions, protective equipment and emergency procedures:*** Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.2 ***Environmental precautions:*** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 ***Methods and materials for containment and cleaning up:*** Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 ***Reference to other sections:*** For disposal see section 13.

7. HANDLING AND STORAGE

7.1 ***Precautions for safe handling:*** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

7.2 ***Conditions for safe storage, including any incompatibilities:*** Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 ***Specific end uses:*** no data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ***Control parameters***

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Update
Ethanol	64-17-5	TWA	1000ppm 1920mg/m^3	2005-04-06[0]
Methanol	67-56-1	STEL	250ppm 333mg/m^3	2005-04-06[1]
Methanol	67-56-1	TWA	200ppm 266mg/m^3	2005-04-06[1]
Methanol	67-56-1	TWA	200ppm 260mg/m^3	2006-02-09[2]

[0]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

[1]UK. EH40 WEL - Workplace Exposure Limits Remarks Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

[2]Europe. Indicative occupational exposure limit values Identifies the possibility of significant uptake through the skin Indicative

8.2 *Exposure controls*

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance:	**Form**: Liquid	**Colour**: Colourless	
b) Odour:	no data available		
c) Odour Threshold:	no data available		
d) pH:	no data available		
e) Melting/freezing point:	-144.0	Melting point/range: no data available	
f) Initial boiling point and boiling range:	78 °C		
g) Flash point:	14 °C - closed cup		
h) Evaporation rate:	no data available		
i) Flammability (solid, gas):	no data available		
j) Upper/lower flammability or explosive limits:	3.3-24.5%(V)		
k) Vapour pressure:	no data available		
l) Vapour density:	no data available		

m) Relative density:	0.789 g/mL at 25 °C
n) Water solubility:	no data available
o) Partition coefficient: n-octanol/water: no data available	
p) Autoignition temperature:	no data available
q) Decomposition temperature:	no data available
r) Viscosity:	no data available
s) Explosive properties:	no data available
t) Oxidizing properties:	no data available
9.2 *Other safety information:*	no data available

10. STABILITY AND REACTIVITY

10.1 *Reactivity:* no data available

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 and sparks. Extremes of temperature and direct sunlight.

10.5 *Incompatible materials:* acids, Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Ammonia, Peroxides

10.6 *Hazardous decomposition products:* formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

11.1 *Information on toxicological effects*

Acute toxicity: LD50 Oral - rat - 7,060 mg/kg (Ethanol)

Remarks: Lungs, Thorax, or Respiration: Other changes.

LC50 Inhalation - rat - 10 h - 20000 ppm(Ethanol)

Skin corrosion/irritation: Skin - rabbit - Irritating to skin. - 24 h (Ethanol)

Serious eye damage/eye irritation: Eyes - rabbit - Mild eye irritation - 24 h (Ethanol)

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity: Carcinogenicity - mouse – Oral. Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumours. Blood: Lymphomas including Hodgkin's disease. (Ethanol). This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. (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. Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence. (Ethanol)

Specific target organ toxicity - single exposure: Inhalation - May cause respiratory irritation. (Ethanol)

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Potential health effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes serious eye irritation.

Signs and Symptoms of Exposure: Central nervous system depression, narcosis, Damage to the heart.

Additional Information: RTECS: Not available

12. ECOLOGICAL INFORMATION

12.1 *Toxicity:* Toxicity to fish LC50 - *Oncorhynchus mykiss* (rainbow trout) - 13,000.00 mg/l - 96 h (Ethanol)

LC50 - *Oncorhynchus mykiss* (rainbow trout) - 10,400.00 mg/l - 96 h (Ethanol)

LC50 - *Pimephales promelas* (fathead minnow) - 15,300.00 mg/l - 96 h (Ethanol)

LC50 - other fish - 10,000.00 mg/l - 24 h (Ethanol)

Toxicity to daphnia and other aquatic invertebrates.

EC50 - *Daphnia magna* (Water flea) - 9.30 mg/l - 48 h (Ethanol)

12.2 *Persistence and degradability:* no data available

12.3 *Bioaccumulative potential:* no data available

12.4 *Mobility in soil:* no data available

12.5 *Results of PBT and vPvB assessment:* no data available

12.6 *Other adverse effects:* Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 *Waste treatment methods*

Product: Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 *UN-Number*

ADR/RID:	1170	IMDG:	1170	IATA:	1170

14.2 *UN proper shipping name*

ADR/RID: ETHANOL

IMDG: ETHANOL

IATA: ETHANOL

14.3 *Transport hazard class(es)*

ADR/RID:	3	IMDG:	3	IATA:	3

14.4 *Packaging group*

ADR/RID:	II	IMDG:	II	IATA:	II

14.5 *Environmental hazards*

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 *Special precautions for users:* EMS-No: F-E, S-D

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 *Safety, health and environmental regulations/legislation specific for the substance or mixture:* no data available

15.2 *Chemical Safety Assessment:* no data available

16. OTHER INFORMATION

Acute Tox. Acute toxicity

Flam. Liq. Flammable liquids

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H370 Causes damage to organs.

STOT SE Specific target organ toxicity - single exposure