

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**1.1 Product identifiers**

Product name: **DIETHYL ETHER**

CAS-No.: **60-29-7**

Product Number: **A67787**

**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 solids (Category 1); Acute aquatic toxicity (Category 1); Chronic aquatic toxicity (Category 1)

**According to European Directive 67/548/EEC as amended:** Highly flammable.

**2.2 Label elements**

Pictogram



Signal word

Danger

**Hazard statement(s):** H224 Extremely flammable liquid and vapour. H302 Harmful if swallowed.

H336 May cause drowsiness or dizziness.

**Precautionary statement(s):** P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

**Supplemental Hazard information (EU):** EUH019 May form explosive peroxides. EUH066 Repeated exposure may cause skin dryness or cracking.

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s):



**R-phrases(s):** R12 Extremely flammable. R19 May form explosive peroxides. R22 Harmful if swallowed. R66 Repeated exposure may cause skin dryness or cracking. R67 Vapours may cause drowsiness and dizziness.

**S-phrases(s):** S9 Keep container in a well-ventilated place. S16 Keep away from sources of ignition. S29 Do not empty into drains. S33 Take precautionary measures against static discharges.

**2.3 Other hazards** – no data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Formula:  $C_4H_{10}O$

##### DIETHYL ETHER

CAS-No.: 60-29-7

EC-No.: 200-467-2

Index-No.: 603-022-00-4

##### 2,6-DI-TERT-BUTYL-P-CRESOL

CAS-No.: 128-37-0

EC-No.: 204-881-4

#### 3.2 Mixtures

Component	Classification	Concentration
DIETHYL ETHER	-	99.7%
2,6-DI-TERT-BUTYL-P-CRESOL	-	0.3% (1ppm)

### 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.

**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:** Cough, chest pain, Difficulty in breathing, Dizziness, Drowsiness, Contact with eyes can cause:, Redness, Provokes tears., Blurred vision, Prolonged or repeated exposure to skin causes defatting and dermatitis.

**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:** Carbon oxides

**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 vapours, 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.

**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. 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
DIETHYL ETHER	60-29-7	STEL	200ppm 620mg/m <sup>3</sup>	UK
DIETHYL ETHER	60-29-7	TWA	100ppm 310mg/m <sup>3</sup>	UK

DIETHYL ETHER	60-29-7	TWA	100ppm 308mg/m <sup>3</sup>	EU
DIETHYL ETHER	60-29-7	STEL	200ppm 616mg/m <sup>3</sup>	EU

UK. EH40 WEL – Workplace Exposure Limits

Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values  
Remarks 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 AXBEK (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:              116 °C                      Melting point/range: no data available
- f) Initial boiling point and boiling range: 34.6 °C at 1,013 hPa
- g) Flash point:                              40 °C - closed cup
- h) Evaporation rate:                      no data available
- i) Flammability (solid, gas):              no data available
- j) Upper/lower flammability or explosive limits: 1.8-48%(V)
- k) Vapour pressure:                      189hPa at 0°C; 389hPa at 10°C; 563hPa at 20°C; 863hPa at 30°C; 1,228hPa at 40°C; 2,311hPa at 60°C
- l) Vapour density:                          2.56 - (Air = 1.0)
- m) Relative density:                      0.71 g/cm<sup>3</sup> at 20 °C
- n) Water solubility:                      65 g/L at 20 °C
- 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:** Contains the following stabiliser(s): BHT (1 ppm)

**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:** Oxidizing agents, Strong acids

**10.6 Hazardous decomposition products:** Other decomposition products - no data available

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity:** LD50 Oral - rat - 1,215 mg/kg

LC50 Inhalation - mouse - 30 min - 31000ppm

Remarks: Behavioural: Convulsions or effect on seizure threshold.

LD50 Dermal - rabbit - > 14.2 g/kg

**Skin corrosion/irritation:** no data available

**Serious eye damage/eye irritation:** no data available

**Respiratory or skin sensitization:** no data available

**Germ cell mutagenicity:** Genotoxicity in vitro - mouse – Embryo: DNA inhibition

Genotoxicity in vitro - Hamster – fibroblast: Other mutation test systems

**Carcinogenicity:** 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:** no data available

**Specific target organ toxicity - single exposure:** May cause drowsiness or dizziness.

**Specific target organ toxicity - repeated exposure:** no data available

**Aspiration hazard:** no data available

#### **Potential health effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.

**Ingestion** Harmful if swallowed.

**Skin** May be harmful if absorbed through skin. May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

**Eyes** Causes serious eye irritation.

**Signs and Symptoms of Exposure:** Cough, chest pain, Difficulty in breathing, Dizziness, Drowsiness, Contact with eyes can cause:, Redness, Provokes tears., Blurred vision, Prolonged or repeated exposure to skin causes defatting and dermatitis.

**Additional Information:** RTECS: KI5775000

## **12. ECOLOGICAL INFORMATION**

**12.1 Toxicity:** Toxicity to fish LC50 - *Pimephales promelas* (fathead minnow) - 2,560 mg/L - 96 h

**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:** no data available

## **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: 1155 IMDG: 1155 IATA: 1155

##### 14.2 UN proper shipping name

ADR/RID: DIETHYL ETHER

IMDG: DIETHYL ETHER

IATA: DIETHYL ETHER

##### 14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

##### 14.4 Packaging group

ADR/RID: I IMDG: I IATA: I

##### 14.5 Environmental hazards

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

##### 14.6 Special precautions for users

no data available

#### 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

no data available