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

1.1 **Product identifiers**
   - **Product name**: Diethyl Ether
   - **CAS-No.**: 60-29-7

1.2 **Relevant identified uses of the substance or mixture and uses advised against**
   - **Identified uses**: Laboratory chemicals, Industrial & for professional use only.

1.3 **Details of the supplier of the safety data sheet**
   - **Company**: Central Drug House (P) Ltd
     7/28 Vardaan House
     New Delhi-10002
     INDIA
   - **Telephone**: +91 11 49404040
   - **Email**: care@cdhfinechemical.com

1.4 **Emergency telephone number**
   - **Emergency Phone #**: +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 **Classification of the substance or mixture**
   - **Classification according to Regulation (EC) No 1272/2008**
     - Flammable liquids (Category 1), H224
     - Acute toxicity, Oral (Category 4), H302
     - Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
   - For the full text of the H-Statements mentioned in this Section, see Section 16.

   - **Classification according to EU Directives 67/548/EEC or 1999/45/EC**
     - F+ Extremely flammable
     - R12
     - R19
     - Xn Harmful
     - R22
     - R66
     - R67
   - For the full text of the R-phrases mentioned in this Section, see Section 16.

2.2 **Label elements**
   - **Labelling according Regulation (EC) No 1272/2008**
SECTION 2: Transport information

2.3 Other hazards
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.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Ether
Ethyl ether

Formula: C₄H₁₀O
Molecular weight: 74.12 g/mol
CAS-No.: 60-29-7
EC-No.: 200-467-2
Index-No.: 603-022-00-4

Hazardous ingredients according to Regulation (EC) No 1272/2008
Component Classification Concentration
Diethyl ether CAS-No. 60-29-7 Flam. Liq. 1; Acute Tox. 4; <= 100 %
EC-No. 200-467-2 STOT SE 3; H224, H302,
Index-No. 603-022-00-4 H336, EUH019, EUH066

Hazardous ingredients according to Directive 1999/45/EC
Component Classification Concentration
Diethyl ether CAS-No. 60-29-7 F+, Xn, R12 - R19 - R22 - R66 <= 100 %
EC-No. 200-467-2 - R67
Index-No. 603-022-00-4

For the full text of the H-Statements and R-Phrases 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.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 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. For personal protection see section 8.

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.

SECTION 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. For precautions see section 2.2.

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. Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated
SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Components with workplace control parameters

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.

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).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
a) Appearance Form: liquid
   Colour: colourless
b) Odour sweet, ether-like
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point Melting point/range: -115.99 °C
f) Initial boiling point and boiling range 34.6 °C at 1.013 hPa
g) Flash point -39.99 °C - closed cup - DIN 51755 Part 1
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits Upper explosion limit: 48 %(V)
   Lower explosion limit: 1.8 %(V)
k) Vapour pressure 189 hPa at 0 °C
   389 hPa at 10 °C
   563 hPa at 20 °C
   863 hPa at 30 °C
   1.228 hPa at 40 °C
   2.311 hPa at 60 °C
l) Vapour density 2.56 - (Air = 1.0)
m) Relative density 0.71 g/cm³ at 20 °C
n) Water solubility 65 g/l at 20 °C
o) Partition coefficient: n-octanol/water log Pow: 1.1
p) Auto-ignition temperature 170 °C
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
Relative vapour density 2.56 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
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.

10.5 Incompatible materials
Oxidizing agents, Strong acids

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 1.215 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Mouse - 30 min - 31000 ppm
Remarks: Behavioral: Convulsions or effect on seizure threshold.

LC50 Inhalation - Rat - 4 h - 32000 ppm

LD50 Dermal - Rabbit - > 14.2 g/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
in vivo assay - Mouse
Result: Did not cause sensitisation on laboratory animals.
(OECD Test Guideline 429)
**Germ cell mutagenicity**  
No data available

**Carcinogenicity**  
No data available

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

**Additional Information**  
RTECS: KI5775000

Inhalation may provoke the following symptoms:  
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.  
Liver - Ingestion may provoke the following symptoms.; Irregularities - Based on Human Evidence

**SECTION 12: Ecological information**

**12.1 Toxicity**

- Toxicity to fish  
  LC50 - Pimephales promelas (fathead minnow) - 2.560 mg/l - 96 h

- Toxicity to daphnia and other aquatic invertebrates  
  EC50 - Daphnia magna (Water flea) - 165 mg/l - 24 h  
  (DIN 38412)

- Toxicity to algae  
  NOEC - Desmodesmus subspicatus (green algae) - > 100 mg/l - 72 h  
  (OECD Test Guideline 201)

**12.2 Persistence and degradability**

Biodegradability Result: - Not readily biodegradable.

**12.3 Bioaccumulative potential**

No bioaccumulation is to be expected (log Pow <= 4).

**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**

**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.

**Contaminated packaging**

Dispose of as unused product.
SECTION 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 user
No data available

SECTION 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

15.2 Chemical Safety Assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.  Acute toxicity
EUH019  May form explosive peroxides.
EUH066  Repeated exposure may cause skin dryness or cracking.
Flam. Liq.  Flammable liquids
H224  Extremely flammable liquid and vapour.
H302  Harmful if swallowed.
H336  May cause drowsiness or dizziness.
STOT SE  Specific target organ toxicity - single exposure

Full text of R-phrases referred to under sections 2 and 3

F+  Extremely flammable
Xn  Harmful
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.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.