

**Diethyl Ether 99% AR**
Product code - 01000**MATERIAL SAFETY DATA SHEET**
SDS/MSDS**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Diethyl Ether 99% AR

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 sheetCompany : AfriFusion (Pty) Ltd.
Unit 14, 400 Roan Crescent, Corporate Park North,
Randjespark, Midrand, Gauteng, South Africa 0157

Telephone : +27 (0)87 095 0868

Email : sales@afrifusion.co.za

1.4 Emergency telephone number

Emergency Phone # : +27 (0)87 095 0868 (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**

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing vapours.
Supplemental Hazard information (EU)	
EUH019	May form explosive peroxides.
EUH066	Repeated exposure may cause skin dryness or cracking.

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 C
Formula	: 4H10O
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;
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
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

Eyeface 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/cm ³ 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 (DIN 38412)	- 24 h
Toxicity to algae	NOEC - Desmodesmus subspicatus (green algae) - > 100 mg/l (OECD Test Guideline 201)	- 72 h

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. AfriFusion (Pty) Ltd. and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.afrifusion.co.za for additional terms and conditions of sale.

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