

## DEMEON D (DME, AEROSOL GRADE)

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product label name** Dimethyl ether  
**Supplier** Akzo Nobel Base Chemicals bv  
Stationsplein 4  
PO Box 247  
NL-3800 AE Amersfoort  
Tel.: +31-334676767  
**Emergency telephone** + 31 570679211 (Fax. + 31 570679801)  
Akzo Nobel Chemicals-Deventer-NL

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives  
Information on hazardous ingredients

**Chemical description** Dimethyl ether

#### Composition / information on ingredients

Number	% w/w	CAS-number	Chemical name	
1	approx. 100	115-10-6	Dimethyl ether	
Number	EC-number	Annex-1 number	Symbol(s)	Risk-phrase(s)
1	204-065-8	603-019-00-8	F+	R12

### 3. HAZARDS IDENTIFICATION

Extremely flammable.

### 4. FIRST AID MEASURES

**Symptoms and effects** Irritating to eyes and respiratory system. Causes frost bite.

#### First aid

##### General

In all cases of doubt, or when symptoms persist, seek medical attention.

##### Inhalation

Move to fresh air, rest, half upright position, loosen clothing. Oxygen or artificial respiration if there is difficulty in breathing. Seek medical advice after significant exposure.

##### Skin

In case of frostbite: DO NOT remove clothing, but first thaw frosted parts with water (never use warm water!). Then remove clothing carefully and seek medical advice.

##### Eye

Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice after significant exposure.

##### Ingestion

Not likely to occur.

#### Advice to physician

Symptomatic treatment is advised

### 5. FIRE-FIGHTING MEASURES

**Extinguishing media** powder

**Unsuitable extinguishing media** none known.

**Special exposure hazards** Vapours may form explosive mixtures with air.  
Vapours may travel to a source of ignition and flash back.

**Hazardous decomposition/combustion products** No hazardous decomposition products known.

**Protective equipment** Use self-contained or supplied-air respiratory equipment.

**Other information** Cool closed containers with water.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions** Wear self contained breathing apparatus.  
For personal protection see Section 8.

**Environmental precautions** Do not allow to enter drains or water courses.

**Methods for cleaning up** Isolate spill area. Ventilate the area.

**Other information** Take precautionary measures against static discharges.  
Keep away from sources of ignition - No smoking.

### 7. HANDLING AND STORAGE

**Handling** Use only in well-ventilated areas. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

**Fire and explosion prevention** Keep away from sources of ignition - No smoking.  
Take precautionary measures against static discharges.  
Vapours are heavier than air and may spread along floors.  
Vapours may travel to a source of ignition and flash back.

## DEMEON D (DME, AEROSOL GRADE)

**Storage requirements** Store in a dry well ventilated place away from sources of heat and direct sunlight.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls** Provide adequate ventilation.  
Use explosion protected equipment.

#### Exposure limits

##### Name

Dimethyl ether In this country no exposure limit has been established

#### Personal protection

**Respiratory** Use self-contained respiratory equipment

**Hand** Wear suitable gloves of neoprene.

**Eye** Wear eye/face protection.

**Skin and body** Wear suitable protective clothing.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** liquefied gas ( 25 °C )

**Colour** colourless

**Odour** almost odourless

**Boiling point/range** -25 °C ( 101.3 kPa )

**Melting point/range** -141 °C ( freezing point )

**Flash point** -41 °C

**Flammability** Extremely flammable

**Autoignition temperature** 350 °C (235 °C, BAM, DIN 51 794)

**Explosive properties** Vapours may form explosive mixtures with air

**Explosion limits** 3 - 18.6 Vol % (ASTM)

**Oxidizing properties** not determined

**Vapour pressure** 510 kPa ( 20 °C )  
1140 kPa (50 °C )

**Density** approx. 670: kg/m<sup>3</sup> ( 20 °C, liquid )

**Bulk density** not applicable

**Solubility in water** 328 g/l ( 20 °C, 410 kPa )

**Solubility in other solvents** Soluble in: methanol, ethanol, Isopropanol, chlorinated hydrocarbons, toluene

**pH value** not relevant

**Partition coefficient** -0.18

**n-octanol/water**

**Relative vapour density (air=1)** 1.59

**Viscosity** not applicable

### 10. STABILITY AND REACTIVITY

**Stability** Stable under recommended storage and handling conditions (see section 7).

**Conditions to avoid** Keep away from sources of ignition - No smoking.  
Avoid contact with Air / O<sub>2</sub> ( Formation of peroxides )

**Materials to avoid** Chlorine, Air, hydrochloric acid (HCl), O<sub>2</sub>, HF, N<sub>2</sub>O, strong oxidising agents rubber, KEL-F, Viton

**Hazardous decomposition products** No hazardous decomposition products known.

### 11. TOXICOLOGICAL INFORMATION

**Name** Dimethyl ether

#### Acute toxicity

**Oral LD50** not applicable

**Inhalation LC50** rat, 16,4 Vol % , 4 - hours inhalation ( Lit. )

#### Irritation

**Skin** Causes frost bite

**Other toxicological information** Not mutagenic, Not teratogenic, not carcinogenic.

90 days inhalation, rat: No Observed Effect Concentration (NOEC) 10000 ppm

## DEMEON D (DME, AEROSOL GRADE)

### 12. ECOLOGICAL INFORMATION

Name	Dimethyl ether
Ecotoxicity	
fish	Poecilia reticulata: Acute toxicity, 96h-LC50 > 4000 mg/l
daphnia	Daphnia magna: Acute toxicity, 48h-EC50 > 4000 mg/l ( Akzo Nobel E-file )
Fate	
Degradation Abiotic	The product can be degraded by chemical or photolytic processes
Degradation Biotic	Not readily biodegradable ( Closed bottle test )

### 13. DISPOSAL CONSIDERATIONS

Product	According to local regulations ( most probably controlled incineration )
Contaminated packaging	not restricted. Exclude sources of ignition and ventilate the area.

### 14. TRANSPORT INFORMATION

#### Land transport (ADR/ RID)

ADR class	2	ADR Classification Code	2F / 2F
RID class	2	ADR/RID packing group	not applicable
Hazard Identification No.	23	Substance Identification No.	1033
TREM-Card	CEFIC TEC(R)- 20G2F	UN number	1033
Proper Shipping Name	Dimethyl ether		
Other information	Transport label(s): 2.1		

#### Sea transport (IMDG-code/ IMO)

IMO/IMDG code		Class	2
Packing group	none	UN number	1033
EMS	2-07	Subsidiary Risk	
Marine pollutant	no		
Proper Shipping Name	Dimethyl ether		
Other information	Transport label(s): 2.1		

#### Air transport (ICAO-TI/ IATA-DGR)

Class	2.1	Packing group	
Proper Shipping Name	Dimethyl ether		
Other information	Cargo aircraft only Transport label(s): 2.1 ( flammable gas )		

### 15. REGULATORY INFORMATION

Chemical description	Dimethyl ether
----------------------	----------------

Labelling according to EC directives

EC-number	See section 2.
Classification based on	Annex-1



Symbol(s)	HIGHLY FLAMMABLE (F)
R(isk) phrase(s)	R12: Extremely flammable
S(afety) phrase(s)	(S2: Keep out of the reach of children ) S9 : Keep container in a well-ventilated place S16: Keep away from sources of ignition - No smoking S33: Take precautionary measures against static discharges
Wassergefährdungsklasse (WGK)	1

**SAFETY DATA SHEET**  
According to EC-directive 2001/58/EC

## **DEMEON D (DME, AEROSOL GRADE)**

---

### **16. OTHER INFORMATION**

---

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.

#### **R-pharse information**

<b>Chemical name</b>	<b>Risk-phrase(s)</b>	
Dimethyl ether	R12	Extremely flammable

#### **History**

<b>Date of printing/ pdf file generated</b>	12-05-2003	
<b>Revision</b>	3.06	
<b>Composed by</b>	Dr. D.J. Buckland	H. Berkhout
<b>Changes were made in section</b>	14	