

SAFETY DATA SHEET

Based on Directive 91/155/EEC of the Commission of
the European Communities

MDI with TETRAFLUORO-ETHANE as Propellant

1. Identification of the substance/preparation and the company

1.1 Identification of the substance or preparation:

Synonyms : MDI with tetrafluoroethane as a propellant
A COMPONENT

CAS no. : N.A.
EEC index no. : N.A. **NFPA code** : N.D.
EINECS no. : N.A. **Molecular weight** : N.A.
RTECS no. : N.A. **Formula** : N.A.

1.2 Company/undertaking identification:

GASCO
Division of **MEBROM nv**
Assenedestraat 4
9940 ERTVELDE-RIEME
BELGIUM
Phone : +32 9 341 97 77 Fax : +32 9 341 97 70

1.3 Telephone number for emergency:

See 1.2

2. Composition/information on ingredients

Hazardous ingredients	CAS no.	Conc in %	Hazard class.	Risks (R-phrases)
4,4'-diphenylmethanediisocyanate (MDI)	000101-68-8	40/70	Xn	20-36/37/38-42/43
4,4'-MDI homopolymer	009016-87-9	40/70	Xn	20-36/37/38-42/43
tetrafluoroethane	000811-97-2	2/10	-	-

3. Hazards identification

- Harmful by inhalation
- Irritating to eyes, respiratory system and skin
- May cause sensitization by inhalation and skin contact

4. First aid measures

4.1 Eye contact:

- Rinse immediately with plenty of water for 15 minutes
- Do not apply neutralizing agents
- Consult a doctor/medical service if irritation persists

4.2 Skin contact:

- Wash immediately with lots of water and soap for 15 minutes
- Consult a doctor/medical service if irritation persists

4.3 After inhalation:

- Unconscious: maintain adequate airway and respiration
- Remove the victim into fresh air
- Consult medical service if breathing problems develop

4.4 After ingestion:

- Immediately give lots of water to drink
- Never give water to an unconscious person
- Consult a doctor/medical service if you feel unwell
- Do not allow vomiting

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5. Fire-fighting measures

5.1 Suitable extinguishing media:

- For surrounding fires: all extinguishing media allowed

5.2 Unsuitable extinguishing media:

- No data available

5.3 Special exposure hazards:

- On burning : release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, hydrofluoric acid, hydrogen chloride and small quantities of hydrogen cyanide)
- Heat may cause pressure rise with explosion of gas cylinders

5.4 Instructions:

- Cool gas cylinders with water spray/remove them into safety
- Dilute toxic gases with water spray
- Do not move the load if exposed to heat

5.5 Special protective equipment for firefighters:

- Heat/fire exposure: compressed air/oxygen apparatus
- Heat/fire exposure: gas-tight suit

6. Accidental release measures

6.1 Personal protection: see 8.3

6.2 Environmental precautions:

- Plug the leak, cut off the supply
- Dam up the liquid spill

6.3 Clean-up:

- Take up liquid spill into adsorbent material, e.g.: saw dust or vermiculite
- Scoop adsorbed substance into closing containers
- Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:

- Observe very strict hygiene - avoid contact
- Remove contaminated clothing immediately
- Clean contaminated clothing

7.2 Storage:

- Ventilation at floor level
- No naked flames
- Keep away from: heat sources, acids, bases, alcohols

Storage temperature: 25 °C

7.3 Materials for packaging:

- suitable : metal
- to avoid : no data available

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8. Exposure controls/Personal protection

8.1 Recommended engineering controls:

- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

8.2 Exposure limits:

4,4'-diphenylmethanediisocyanate (MDI) :

TLV value : 0.005 ppm 0.051 mg/m³

8.3 Personal protection:

eye protection:

- Face shield

skin protection:

- Gloves
- Protective clothing

materials for protective clothing:

- No data available

respiratory protection:

- In case of insufficient ventilation, wear respiratory equipment

9. Physical and chemical properties

9.1 Appearance (at 20°C)	:	Liquid, under gas pressure	
9.2 Odour	:	Mild	
9.3 Colour	:	Dark brown	
9.4 pH value	:	N.D.	
9.5 Boiling point/boiling range	:	N.D.	°C
9.6 Melting point/melting range	:	N.D.	°C
9.7 Flashpoint	:	> 199	°C
9.8 Auto-ignition point	:	N.D.	°C
9.9 Explosion limits	:	N.D.	vol%
9.10 Vapour pressure (at 20°C)	:	3510	hPa
9.11 Relative density (at 20°C)	:	1.3	
9.12 Water solubility	:	N.D.	g/100 ml
9.13 Soluble in	:	N.D.	
9.14 Relative vapour density	:	N.D.	
9.15 Saturation concentration	:	N.D.	g/m ³
9.16 Viscosity	:	N.D.	Pa.s

10. Stability and reactivity

10.1 Stability:

- Unstable on exposure to moisture

10.2 Reactivity:

- On burning : release of toxic and corrosive gases/vapours (ammonia, nitrous vapours, hydrofluoric acid, hydrogen chloride and small quantities of hydrogen cyanide)
- Reacts slowly with water (moisture)
- Reacts violently on exposure to temperature rise with (some) acids/bases

11. Toxicological information

11.1 Acute toxicity:

4,4'-diphenylmethanediisocyanate (MDI) :		
LD50 oral rat	: 9200	mg/kg
LD50 dermal rabbit	: > 10000	mg/kg
LC50 inhalation rat	: N.D.	mg/l/4 h
4,4'-MDI homopolymer		
LD50 oral rat	: > 10000	mg/kg
LD50 dermal rabbit	: > 5000	mg/kg
LC50 inhalation rat	: N.D.	mg/l/4 h

11.2 Chronic toxicity:

EEC carc. cat.: not listed
 EEC muta. cat.: not listed
 EEC repr. cat.: not listed
 Carcinogenicity (TLV): not listed
 IARC classification: not listed

11.3 Routes of exposure: swallowed, inhalation, eyes and skin

11.4 Acute effects/symptoms:

- Harmful by inhalation
- Large spills/in enclosed spaces: risk of oxygen deficiency
- Tingling/irritation of the skin
- Respiratory difficulties
- Irritation of the respiratory tract/coughing
- Irritation/redness of the eye tissue
- Irritation of the nasal mucous membranes

11.5 Chronic effects:

- May cause sensitization by skin contact
- May cause sensitization by inhalation

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:

- Skin rash/inflammation
- Possible inflammation of the respiratory tract

12. Ecological information

12.1 Biodegradation:

- | | | | |
|----------|-----------------------------|--------|-------------------------------|
| - soil: | T _½ | : N.D. | days |
| | BOD ₅ | : N.D. | g O ₂ /g substance |
| | COD | : N.D. | g O ₂ /g substance |
| - water: | - Not readily biodegradable | | |
| | - | | |

12.2 Bioaccumulation: - log P_{ow} : N.D.
 - BCF : N.D.
 - Not bioaccumulative

12.3 Aquatic toxicity:

4,4'-diphenylmethanediisocyanate (MDI) :

- LC50 (24 h) : >=500 mg/l (BRACHYDANIO RERIO)
- EC50 : >100 mg/l (DAPHNIA MAGNA)

12.4 Other information:

- WGK: 1 (4,4'-diphenylmethanediisocyanate (MDI))
- Effect on the ozone layer : N.D.
- Waste water purification : N.D.

13. Waste disposal considerations

- Hazardous waste (91/689/EEC)
- Remove to an authorized waste treatment plant

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14. Transport information

20
1956

- 14.1 **Substance identification number (UN number):** 1956
- 14.2 **Transport by road/rail (ADR/RID):** class 2, 1 A
Danger code: 20
- 14.3 **Maritime transport (IMDG code):** class 2.2 p. 2124
EMS : 2-04
MFAG : 620
Marine pollutant:
- 14.4 **Inland navigation (ADNR):** class 2, 1 A
- 14.5 **Air freight (ICAO):** class 2.2
Instruction "passenger": 200
Instruction "cargo": 200
- 14.6 **Other information:**
UN 1956 Compressed gas, n.o.s., contains tetrafluoroethane

15. Regulatory information

Labelling in accordance with EC directives 67/548/EEC and 88/379/EEC



Xn

contains: 4,4'-diphenylmethanediisocyanate (MDI), 4,4'-MDI homopolymer and tetrafluoroethane

- R20 : Harmful by inhalation
R36/37/38 : Irritating to eyes, respiratory system and skin
R42/43 : May cause sensitization by inhalation and skin contact
- S23 : Do not breathe vapours
S36/37 : Wear suitable protective clothing
S38 : In case of insufficient ventilation, wear respiratory equipment
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible).

16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED

MSDS Established : 27-03-2002
Reference number : Mebrom 270302