

SAFETY DATA SHEET

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

R 417 a

1. Identification of the substance/preparation and the company

1.1 Identification of the substance or preparation:

Synonyms : R 417 a

CAS no. : N.A.
EC index no. : N.A.
EINECS no. : N.A.
RTECS no. : N.A.
NFPA code : 1-0-1(*)
Molecular weight : N.A.
Formula : N.A.

1.2 Company/undertaking identification:

GASCO, Division of MEBROM NV
Assenedestraat 4
B-9940 Ertvelde-Rieme, Belgium
Tel. : (+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)
R600 butane	000106-97-0	3,5	F+-	-12
R125 pentafluoroethane	000354-33-6	46,5		
R134a tertrafluoroethane	000811-97-2	50		

3. Hazards identification

- Contains a liquefied gas. Contact of liquid may cause frostbite and injury to the cornea.
- May have narcotic effect at high concentrations
- Heating will cause a rise in pressure with a risk of bursting.
- On combustion, toxic gases are released.
According to EEC criteria, this product is not classified as a "hazardous Preparation"

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
- Do not remove clothing if it sticks to the skin
- Consult a doctor/medical service if irritation persists

4.3 After inhalation:

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

4.4 After ingestion:

- Not applicable (gas)

Note to the physician: avoid administering adrenaline or similar products

5. Fire-fighting measures**5.1 Suitable extinguishing media:**

- Non combustible
- For surrounding fires: all extinguishing media allowed

5.2 Unsuitable extinguishing media:

- None

5.3 Special exposure hazards:

- Heat may cause pressure rise with explosion of tanks/drums
- Toxic vapours are released

5.4 Instructions:

- Cool tanks/drums 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 and gas-tight suit

6. Accidental release measures**6.1 Personal protection:** see 8.3**6.2 Environmental precautions:**

- Contain leaking substance, pump over in suitable containers
- Plug the leak, cut off the supply
- Try to reduce evaporation
- Tip the container on one side to stop the leakage

6.3 Clean-up:

- Damaged/cooled tanks must be emptied
- Clean contaminated surfaces with an excess of water
- Allow residual product to evaporate

7. Handling and storage**7.1 Handling:**

- Observe normal hygiene standards
- Clean contaminated clothing
- Ventilate
- Avoid contact with high temperatures or hot surfaces
- Smoking is forbidden

7.2 Storage:

- Store in a cool area
- Ventilation at floor level
- Keep away from: heat sources, oxidizing agents, metals

Storage temperature: < 45 °C

7.3 Materials for packaging:

- suitable : pressurized metal container
- to avoid : aluminium, zinc, magnesium

8. Exposure controls/Personal protection

8.1 Recommended engineering controls:

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

Sampling methods:

- No data available

8.2 Exposure limits: (ACGIH-USA: 1998)

OES : 1000ppm (4200 mg/m³) (long term exposure limit -8h TWA reference period
(for tetrafluoromethane))

8.3 Personal protection:

eye protection:

- Protective goggles

hand protection:

- Insulated gloves

skin protection:

- Protective clothing

materials for protective clothing:

- Neoprene, PVA, leather

respiratory protection:

- In event of insufficient ventilation : self-contained breathing apparatus

Do not drink, eat or smoke on the workplace

9. Physical and chemical properties

9.1 Appearance (at 20°C)	:	Gas	
9.2 Odour	:	Sweet, slightly ethereal	
9.3 Colour	:	Colourless	
9.4 pH value	:	N.D.	
9.5 Boiling point/boiling range	:	-45	°C
9.6 Melting point/melting range	:	N.D.	°C
9.7 Flashpoint	:	N.A.	°C
9.8 Auto-ignition point	:	N.D.	°C
9.9 Explosion limits	:	N.D.	vol% (°C)
9.10 Vapour pressure (at 25°C)	:	9.72	bar
9.11 Relative density (at 25°C)	:	1.200	
9.12 Water solubility	:	Poorly soluble	
9.13 Soluble in	:	common solvents	
9.14 Relative gas density	:		
9.15 Saturation concentration	:	N.D.	g/m ³
9.16 Viscosity	:	N.D.	Pa.s

10. Stability and reactivity

10.1 Stability:

- Stable under normal conditions and ambient temperature

10.2 Reactivity/Hazardous decomposition products:

- Decomposes on exposure to temperature rise: release of toxic and corrosive gases/vapours hydrofluoric acid, hydrochloric acid
- Violent to explosive reaction on exposure to temperature rise with (some) metals

10.3 Conditions/materials to avoid:

- Heat sources, oxidizing agents, metals
- Reacts violently with : alkali metals, alkaline earth metals, magnesium and powdered metals

11. Toxicological information**11.1 Acute toxicity:**

R134a CL50 inhalation rat : > 2000 mg/l/4h

11.2 Chronic toxicity:

EC carc. cat.: not listed
EC muta. cat.: not listed
EC repr. cat.: not listed
Carcinogenicity (TLV): not listed

IARC classification: not listed

11.3 Routes of exposure: inhalation, eyes and skin**11.4 Acute effects/symptoms:****AFTER INHALATION:**

- Non-toxic by inhalation (LC50 inh.,rat >50 mg/l/4h)
- Large spills/in enclosed spaces: risk of oxygen deficiency

EXPOSURE TO HIGH CONCENTRATIONS:

- Feeling of weakness
- CNS depression
- Dizziness
- Headache
- Mental confusion
- Coordination disorders
- Disturbances of consciousness
- Accelerated heart action
- Disturbances of heart rate

ON HEATING:

- Respiratory difficulties
- Risk of lung oedema

AFTER INGESTION:

- Toxicity data on ingestion: N.A.

AFTER SKIN CONTACT:

- Dry skin
- Frostbites injury to the cornea

AFTER EYE CONTACT:

- Frostbites

11.5 Chronic effects:

- No data available

12. Ecological information**12.1 Mobility:**

- Product is volatile when in aqueous solution

12.2 Biodegradation:

- **soil:** - No data available
- **water:** - No data available

12.3 Bioaccumulation:

Not bioaccumulable

12.4 Aquatic toxicity:**R 134a:**

- LC50 (96 h) : 450 mg/l (SALMO GAIIRDNERI/ONCORHYNCHUS MYKISS)
- EC50 (48 h) : 980 mg/l (DAPHNIA MAGNA)

12.5 Other information:

- **WGK:** 1 (*)
- **Effect on the ozone layer :** N.D.
- **Waste water purification :** N.D.

13. Waste disposal considerations**13.1 Product**

Offer remainders and non-recyclable solutions back to a company with a permit. In accordance with the local and national laws. Consult the producer/supplier for information about recovery/recycling.

13.2 Packing

Return empty packing to supplier

14. Transport information

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3163

- 14.1 **Proper shipping name:** UN 3163 Liquefied gas, n.o.s.(R125,R134a,R600),2.2
- 14.2 **Transport by road/rail (ADR/RID):** class 2, 2 A
Danger code: 20
Danger labels on tanks: 2.2
on packages: 2.2
- 14.3 **Substance identification number (UN number):** 3163
Packing: -
- 14.4 **Maritime transport (IMDG code):** class 2.2 p. 2155
EMS : 2-09
MFAG : 620
Marine pollutant: No
- 14.5 **Inland navigation (ADNR):** class 2, 2 A
- 14.6 **Air freight (ICAO):** class 2.2
Instruction "passenger": 200
Instruction "cargo": 200
- 14.7 **Other information:** -

15. Regulatory information

Labelling in accordance with EC directives 67/548/EEC and 1999/45/EEC

S(02) : (Keep out of reach of children)
S59 : Refer to manufacturer/supplier for information on recovery/recycling

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
* = INTERNAL CLASSIFICATION

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