

SAFETY DATA SHEET

according to 91/155/CEE

Frio+ 410A

1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND COMPANY

Frio+ 410A

GALCO S.A.

Avenue Carton de Wiart 79

B-1090 Brussels - Belgium

Tel. : +32-2-421.01.84

Fax : +32-2-425.46.03

Emergency telephone number NCEC – CARE CHEM 24: + 44 208 762 83 23

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical nature of the preparation :

Difluoromethane (R32)	50% weight
Pentafluoroethane (R125)	50% weight

3. HAZARDS IDENTIFICATION

Most important hazards	: Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Specific hazards	: Rapid evaporation of the liquid may cause frostbite. May cause cardiac arrhythmia.

4. FIRST AID MEASURES

Skin contact	: Frostbite should be treated in the same way as thermal burns.
Eye contact	: Rinse thoroughly with plenty of water for at least 15 minutes and, in case the irritation persists, consult an ophtalmologist.
Inhalation	: Move to fresh air. Oxygen or artificial respiration if needed.

5. FIRE FIGHTING MEASURES

Specific hazards	: At high temperature : thermal decomposition into toxic and corrosive hydrogen fluoride. One of the product's components, R32, can form flammable mixtures with air : 12,7 to 33,4 % volume.
Extinguishing media	: -
Protection equipment	: Wear self-contained breathing apparatus and protective clothes.

SAFETY DATA SHEET

according to 91/155/CEE

Frio+ 410A

Other recommendations : Protect containers against sources of heat to avoid overpressurization. Cool containers / tanks with spray water. Avoid sources of ignition and contact with flames. Do not smoke.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Ensure adequate ventilation. Use personal protective equipment and provide self-contained breathing apparatus.

Precautions in case of accidental release : Ensure adequate ventilation or wear self-contained breathing apparatus.

7. HANDLING AND STORAGE

Handling and storage precautions : Store at room temperature, only in well-ventilated areas. Protect against sources of heat and ignition.

Bibliographic references : Encyclopédie des gaz (Air Liquide - Ed.1976 - Elsevier Amsterdam).

Packaging material : Avoid alloys containing more than 2% of magnesium. Ordinary steel can be used.

Dangerous reactions : -.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering measures : Avoid contact with skin and eyes and inhalation of vapours. Use self-contained breathing apparatus when necessary.

Control parameters : R32 (difluoromethane) : France / USA : No recommended exposure limit for working area. Proposed average value : VMEI = 1000 ppm.
R124 (pentafluoroethane) : France / USA : No recommended exposure limit for working area. Proposed average value : VMEI = 1000 ppm.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form (at 25°C) : liquefied gas

Colour : colourless

Odour : slightly ether-like

pH : -

Boiling point / range : -51,6°C (atm. druk)

SAFETY DATA SHEET

according to 91/155/CEE

Frio+ 410A

Critical temperature	: 71,4°C
Flash point	: none
Auto-ignition temperature	: -
Vapour pressure	: 1,68 MPa / 16,8 bar (25°C) 3,09 MPa / 30,9 bar (50°C)
Critical pressure	: 5,16 MPa (51,6 bar)
Density	: 1.082 kg/m ³ (liquified gas / 25°C) 936 kg/m ³ (liquified gas / 50°C)
Vapour density at boiling point	: 4,11 kg/m ³
Solubility	: -

10. STABILITY AND REACTIVITY

Stability	: No decomposition if used as directed.
Hazardous decomposition products	: toxic and corrosive hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Rapid evaporation of the liquid may cause frostbite. Product is not considered harmful : no mortality for rats after 4 h of exposure to 500000 ppm of any of the product's components. As with other volatile, aliphatic halogenated compounds, accumulation of vapours and/or inhalation of big quantities may cause loss of conscience and cardiac disturbances, aggravated by stress and lack of oxygen ; mortal risk.

12. ECOLOGICAL INFORMATION

Ecotoxical data on the components :

R32 (difluoromethane)	: Not readily biodegradable : 5 % in 28 days. Practically no bio-accumulation : log Pow = 0,21 (measured).
R125 (pentafluoroethane)	: Rapid evaporation : t _{1/2} life = 3,2 h Not readily biodegradable : 5 % in 28 days. Degradation by OH radicals : t _{1/2} life = 6417 days Practically no bio-accumulation : log Pow = 1,48.

Respect local regulations.

SAFETY DATA SHEET

according to 91/155/CEE

Frio+ 410A

13. DISPOSAL CONSIDERATIONS

14. TRANSPORT INFORMATION

UN-nr	: 3163
ADR / RID	: Class 2.2°A Labels : 2 HI-UN nr : 30/1078
IMDG	: Class 2 Subrisks : n.a.* Labels : 2
IATA	: Class : 2 Labels : 2

15. REGULATORY INFORMATION

-

16. OTHER INFORMATION

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a particular application.

Compiled by : Galco S.A.
Avenue Carton de Wiart 79
B-1090 Brussels - Belgium

Phone : 32-2-421.01.84
Fax : 32-2-425.46.03