R422B

Code: TR422B

---

1. IDENTIFICATION OF PREPARATION AND SOCIETY

1.1 Description trade: **R422B**
Code: TR422B

1.2 Uses planned: **Industry**: Refrigeration and conditioning
Type of use: Refrigerant
Application: Professional

1.3 Society:

MARIEL S.R.L.
Via Olubi 5 - 28013 - GATTICO (NO) - Italia
Telefono: +39 0322 838319
Fax: +39 0322 838813
e-mail: laboratorio@mariel.it

1.4 Emergency number: + 39 0322 838319 - 8.30-12.30 / 13.30-17.30

Medical Center (Italy) (24/24 h service)

Pavia +39 0382 24444 (CAV IRCCS Fondazione Maugeri – Pavia - Italy)
Milano +39 02 66101029 (CAV Ospedale Niguarda Ca' Granda – Milano - Italy)
Bergamo +39 800 883300 (CAV Ospedali Riuniti – Bergamo - Italy)
Firenze +39 055 7947819 (CAV Ospedale Careggi – Firenze - Italy)
Roma +39 06 3054343 (CAV Policlinico Gemelli – Roma - Italy)
Roma +39 06 49978000 (CAV Policlinico Umberto I – Roma - Italy)
Napoli +39 081 7472870 (CAV Ospedale Cardarelli – Napoli - Italy)

---

2. IDENTIFICATION OF DANGERS
According to the EC requirements this product is not classified as "hazardous substance"

2.1 HAZARDS INFORMATION: (which do not result in classification)

Rapid evaporation of the liquid may cause frostbite.
High concentrations of vapors may cause headache, nausea, dizziness, drowsiness and may cause unconsciousness. Tachycardia.

Contains fluorinated gases covered by the Kyoto Protocol.

---

3. COMPOSITION AND INFORMATION ON INGREDIENTS

3.1 Description:

Name of the chemical substance: ternary blend refrigerants R32, R125 and R134a.

3% **Isobutane (HC 600)** **EC** 200-857-2
CAS 75-28-5

GHS02

55% **Pentafluoroethane (HFC R125)** **EC** 206-557-8
CAS 354-33-6

42% **Tetrafluoroethane (HFC R134a)** **EC** 212-377-0
CAS 811-97-2

web: www.mariel.it email:info@mariel.it

R422B

Code: TR422B

For more information on hazardous components, see sections 8, 11, 12 and 16.

4. FIRST AID MEASURES

4.1 Inhalation:

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

4.2 Skin Contact:

Allow product to evaporate in the air. Thaw the affected area with water, then carefully remove clothing. Wash with warm water. Get medical attention in case of persistent pain. Wash clothing before reuse.

4.3 Eye Contact:

Hold eyelids open to allow the evaporation of the liquid. Rinse immediately with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.

4.4 Ingestion:

As this product is a gas, refer to the inhalation section. Do not induce vomiting unless directed to do so by medical personnel. If the unfortunate is conscious, rinse his mouth with water and get him to drink 200-300 ml. of water. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Agents:

In case of fire, use extinguisher powder or CO2. In the case of more serious fires, also use alcohol-resistant foam and water spray (fog).

5.2 Unusual Hazards:

Possibility of generating hazardous reactions during a fire due to the presence of F and/or Cl groups. In a fire or if heated, a pressure increase will occur and the container may burst. Use water spray to keep fire-exposed containers cool. This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources.

5.3 Personal Protective Equipment:

In case of fire, wear self-contained positive pressure breathing apparatus (SCBA) and full turnout gear.

5.4 Hazardous thermal decomposition products Special exposure hazards

Use water spray to keep fire-exposed containers cool. This product is not flammable at ambient temperatures and atmospheric pressure. However, this material can ignite when mixed with air under pressure and exposed to strong ignition sources.

6. ACCIDENTAL SPILL OR LEAK RELEASE INFORMATION

6.1 Personal Protection:

Immediately contact emergency personnel. Evacuate personnel to safe areas. Keep unnecessary personnel away. Use suitable protective equipment (listed in Section 8). Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

6.2 Procedure s

Stop leak if without risk. Spillages may evaporate rapidly.

7. HANDLING AND STORAGE

7.1 Storage Conditions:

Store in original container, protected from direct sunlight. Keep container tightly closed in a cool, well- ventilated place.

- Handling Procedures:

Exercise caution when opening to allow pressure release. Store and use away from heat, sparks, open flame, or any other ignition source. Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Provide adequate ventilation. Wash thoroughly after handling.

8. EXPOSURE CONTROL AND PERSONAL PROTECTION

8.1 Exposure Limits (TLV):

1,1,1,2,2 Pentafluoroethane (HFC R125)	:	non established
1,1,1,2-Tetrafluoroethane (HFC R134a)	:	non established
Isobutane (HC 600)	:	1000 ppm, 8 Hr. TWA

TLV - Threshold Limit Value, TWA - Time Weighted Average, STEL - Short Term Exposure Limit.

8.2 Ventilation:

Provide adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated.

8.2.1 Occupational exposure limit values, Directive 98/24/EC: Protection of the health and safety of workers from the risks related to chemical agents at work.

Respiratory Protection	In case of insufficient ventilation, wear suitable respiratory equipment. Recommended: supplied-air respirator.
Hands Protection	Wear insulated gloves suitable for low temperatures. Recommended: butyl rubber.
Eyes and Face Protection	Recommended: safety glasses with side shields, splash goggles. Possible: face shield.
Skin Protection	Wear cotton clothes.

9. TYPICAL PHYSICAL PROPERTIES:

- **Physical state**	: liquefied gas	
- **Color**	: incolor	
- **Odor Characteristics**	: ether-like	
- **Melting Point**	: / /	
- **Boiling Point**	: -41.3 ° C	
- **Auto-ignition Temperature**	: non flammable product	
- **Density, Saturated liquid**	: 1398	Kg/m³
- **Density, Saturated Vapour**	: 5,98	Kg/m³
- **Pressure Saturated Vapour**	: 831.9	at 20°C in kPa
- **Pressure Saturated Vapour**	: 2346	at 60°C in kPa
- **Temperature Critical Point**	: 83.2	°C
- **Pressure Critical Point**	: 3958	kPa

10. STABILITY AND REACTIVITY

Stable under recommended storage and handling conditions.

10.1 Reazioni pericolose:

In a fire or if heated, a pressure increase will occur and the container may burst. Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use.

10.2 Incompatibility:

Alkali metals, alkaline earth metals, powdered metals, metal salts granulated.

10.3 Hazardous Decomposition Products:

Halogen acids, carbon dioxide (CO2), carbon monoxide, fluorocarbons, carbonyl halides.

11. TOXICOLOGICAL INFORMATION

Animal tests

1,1,1,2-Tetrafluoroethane (HFC R134a) inhalation of 4 hours ALC : 567,000 ppm on mices

A small splash of HFC-134a may cause a severe irritation to eyes; animal tests with HFC-134a report skin irritation but not sensitivity.

1,1,1,2,2 Pentafluoroethane (HFC R125) inhalation of 4 hours ALC : > 709,000 ppm on mices

This product has not been tested for eye irritation. This product has not been tested for irritation and skin sensitivity.

Isobutane (HC600a) inhalation of 15 minuts LC50 : 570,000 ppm on mices

Questo componente non è testato per l'irritazione degli occhi e cutaneaa e per la sensibilità animale.

This product has not been tested for eye and skin irritation and for animal sensitivity.

web: www.mariel.it email:info@mariel.it NEVADA REFRIGERANTS

R422B

Code: TR422B

Cancinogenic Effects :
None of the components present in this material have concentrations equal or greater than 0.1% listed in IARC, NTP, OSHA or ACGIH as carcinogens.

12. ECOLOGICAL INFORMATION

12.1 Toxicological Information:
Toxic to water

1,1,1,3 – Tetrafluoroethane:
48 hours LC50 - daphnia magna algae: 980 mg/L
96 hours LC 50 - raimbow trout: 450mg/L

12.2 Other Adverse effects:
- ozone depletion potential (CFC 11=1) : 0
- GWP (global warming potential) : 2080

13. DISPOSAL INFORMATION

The disposal must be in accordance with local and national regulations.

14. TRANSPORT INFORMATION

14.1 Transport on road / rail (ADR/RID) – via sea (IMDG) and via air (ICAO/IATA)

Class:	2	**Shipping description:**	Refrigerant Gas N.A.S.	Hazard Class:	2.2	**N.** UN	3163

15. REGULATORY INFORMATION

This product is not classified according to EU regulations.

EC Labelling none

More Regulations
EC regulation n.842/2006: fluorinated gases covered by the Kyoto Protocol

16. OTHER INFORMATION

Read the safety information of Mariel before use. For more information contact the office or the authorized distributors of Mariel.

Legislations on MSDS:
Safety Data Sheet complies with the REACH directive.

Lista delle frasi R rilevanti riferite al punto 3:
F+ ; R12: estremamente infiammabile

Storico:

Version:	Revision Date:	Print Date:
1	09/01/2013	09/01/2013