

**R437A****Code: TR437****1. IDENTIFICATION OF PREPARATION AND SOCIETY**

- 1.1 Description trade:** R437A
Code: TR49
- 1.2 Uses planned:** Industry: Refrigerant and conditioning
Type of use: Refrigerant
Application: Professional

1.3 Society:

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1.4 Emergency number: + 39 0322 838319 - 8.30-12.30 / 13.30-17.30**Medical Center (Italy) (24/24 h service)**

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

2. IDENTIFICATION OF DANGERS**2.1 Hazards information:**

Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
High vapour concentrations can cause headaches, dizziness, drowsiness, and nausea, and may lead to unconsciousness. Heartbeat irregularity (arrhythmia).

3. COMPOSITION AND INFORMATION ON INGREDIENTS**3.1 Description:****Name of the chemical substance:** Refrigerant Gas

19,5%	Octafluoropropane (FC R218)	EC 200-941-9 CAS 76-19-7
1,4%	Isobutane (R600a) 	EC 200-857-2 CAS 75-28-5
78,5 %	1,1,1,2-Tetrafluoroethane (HFC R134a)	EC 212-377-0 CAS 811-97-2
0,6%	n-pentano 	EC 203-692-4 CAS 109-66-0

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

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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:

Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite. In case of contact with liquid, warm frozen tissues with water and get medical attention. Remove contaminated clothing and shoes. Wash clothing before reuse.

4.3 Eye Contact:

Immediately flush eyes with a large amount of water for at least 15 minutes. If symptoms exist and/or persist, get prompt 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. Never give anything by mouth to an unconscious person. Get medical attention.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Agents:

In case of fire, use water spray (fog), foam, dry chemical or CO2 extinguisher or spray.

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:

Fire-fighters should 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. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Provide adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

6.2 Procedures:

Stop leak if without risk. Spillages may evaporate rapidly.

7. HANDLING AND STORAGE

7.1 FIRE AND EXPLOSIVE PROPERTIES:

Keep container tightly closed in a cool, well-ventilated place.

7.2 Storage Conditions:

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

- Handling Procedures:

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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 CONTROLS AND PERSONAL PROTECTION

8.1 Exposure Limits (TLV) :

No know informations for this mixture

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.

Respiratory Protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Recommended: supplied-air respirator.

- **Eye Protection:** Recommended: safety glasses with side shields, splash goggles. Possible: face shield.

- **Hand Protection:** Insulated gloves suitable for low temperatures. Recommended: butyl rubber.

8.2.2 Other Protective Equipment:



9. TYPICAL PHYSICAL PROPERTIES:

- **State** : liquefied gas
- **Color** : incolor
- **Odor Characteristics** : Ether Slight
- **Molecular weight** : 108.42
- **Boiling Point** : -35 °C
- **Flash point** : not applicable
- **Solubility water** : soluble slightly
- **Relative density** : 1.214 gr/cc a 20°C
- **Vapour density** : 6.83 Bar a 20°C

10. STABILITY AND REACTIVITY

10.1 Chemical Stability:

Stable under normal conditions.

10.2 Hazardous Decomposition products:

These products are halogenated compounds, hydrogen fluoride, acid fluoride by hydrolysis.

10.3 Incompatibility :

Strong oxidising materials. Incompatible with magnesium, zinc, sodium, potassium and aluminium. Incompatibility is more severe if the metal is present as dust or powder or has freshly exposed surfaces.

**R437A****Code: TR437****10.4 Conditions to Avoid :**

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.

11. TOXICOLOGICAL INFORMATION**Effects:****Inhalation** : Heartbeat irregularity (arrhythmia).**Ingestion** : No specific hazard**Skin Contact** : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite. Slightly irritating to the skin.**Eye contact** : Slightly irritating to the eyes.**Carcinogenic Effects:**

These effects are not identified.

12. ECOLOGICAL INFORMATION- **ODP** : Gives not available- **GWP** : Gives not available**13. DISPOSAL INFORMATION****13.1 WASTE DISPOSAL:****Procedure:** Disposal of aerosol containers must be in accordance with local and national regulations.**14. TRANSPORT INFORMATION****14.1 Transport on road, Regular 94/55/CE (ADR 2005):**

Class:	2	Shipping description	Liquefied Gas n.a.s. Octafluoropropane Isobutane 1,1,1,2-Tetrafluoroethane	Hazard Class	2.2	N. UN	3163	N. HI	20
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Code of classification: 2 A**Documents of transport:** Documents of transport**14.2 Transport via sea (IMDG 32-04):**

Class:	2	Shipping description	Liquefied Gas n.a.s. Octafluoropropane Isobutane 1,1,1,2-Tetrafluoroethane	Hazard Class		N. UN	3163
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Documents of transport:

Documents of boarding.

14.3 Air freight (ICAO/IATA):

Classe:	2	Shipping description	Liquefied Gas n.a.s. Octafluoropropane Isobutane 1,1,1,2-Tetrafluoroethane	Hazard Class		N. UN	3163
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Documents of transport:

Documents of aerial boarding.

15. REGULATORY INFORMATION

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This product is not classified according to the EU regulations.

16. OTHER INFORMATION

Sure to read the safety information of Mariel. For more information contact the office or authorized distributors of Mariel.

Legislations on MSDS:

Safety Data Sheet agrees with the REACH directive.

Storico: Version 1: Version 2:
Date of revision: Date of revision:
31/03/2012 29/06/2012

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