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R600a < 1000 mL

Code: TR600

1. IDENTIFICATION OF PREPARATION AND SOCIETY

1.1 Description trade:

R600a < 1000 mL

Code: TR600

1.2 Uses planned:

Industry: Refrigerant and conditioning

Type of use: Refrigerant

Application: Professional

1.3 Society:



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Roma +39 06 49978000 (CAV Policlinico Umberto I – Roma - Italy)

Napoli +39 081 7472870 (CAV Ospedale Cardarelli – Napoli - Italy)

2. IDENTIFICATION OF DANGERS

Reg. CE 1272/2008:



H220 – Extremely flammable.

H280 – Pressurised container; the container may burst with high temperature.

P210 – Keep away from sources of ignition - No smoking.

P377 - Take precautionary measures against static discharges.

P381 – Eliminare ogni fonte di accensione se non c'è pericolo.

P403 – Keep container in a well-ventilated place;

2.1 Hazards information:

Liquefied gas.

Extremely flammable.

2.2 Classification CE :



F+;R12

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3. COMPOSITION AND INFORMATION ON INGREDIENTS

3.1 Description:

Name of the chemical substance: Isobutane.

100% **Isobutane**

EC 200-857-2

CAS 75-28-5



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

4. FIRST AID MEASURES



If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Notes to physician: Do not give adrenaline or similar drugs.

4.1 Inhalation:

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination. Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

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:

Extremely flammable. All known extinguishants can be used.

5.2 Unusual Hazards:

Exposure to fire may cause containers to rupture/explode.

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:

Incomplete combustion may form carbon monoxide. Move away from the container and cool with water from a protected position. Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous.

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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 below 50°C in a 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:

Segregate from oxidant gases and other oxidants in store.

Ensure equipment is adequately earthed. Suck back of water into the container must be prevented. Purge air from system before introducing gas. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Keep away from ignition sources (including static discharges).

Refer to supplier's container handling instructions.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Exposure Limits (TLV) TLV-TWA TLV-STEL

AGCIH 2001	ppm	mg/m ³	ppm	mg/m ³
Isobutane	800	1900		

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

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- State	: liquefied gas	
- Color	: incolore	
- Odor Characteristics	: Inodor	
- Molecular weight	: 58.1	
- Solubility in Water	: 0.03	g/100ml a 25°C a 1013 hPa
- Melting point	: -159.6	°C a 1 bar
- Boiling Point	: -11.7	°C a 1 bar
- Flash point	: -82	°C a 1 bar
- Auto-ignition temperature	: 477	°C
- Relative density	: 2.01	Air=1
- Critical temperature	: 135	°C
- Flammability limit	: low 1.80-high 8.44	In air at 1 bar (% vol)

10. STABILITY AND REACTIVITY:**10.1 Chemical Stability:**

Stable under normal conditions.

10.2 Hazardous Decomposition products:These products carbon oxides (CO, CO₂).**10.3 Incompatibility:**

May react violently with oxidants. Can form explosive mixture with air.

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:**

No known toxicological effects from this product.

Carcinogenic Effects:

These effects are not identified.

For more information on hazardous components, see sections 2 and 8.

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No known ecological damage caused by this product.

13. DISPOSAL INFORMATION

Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Do not discharge into any place where its accumulation could be dangerous. Contact supplier if guidance is required.

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 2013):**

Class: 2 **Shipping description** Isobutane

Hazard Class 2.1 **N. UN** 1950 Aerosol

Code of classification: 5

Documents of transport: Documents of transport

14.2 Transport via sea (IMDG 32-04):

Class: **Shipping description** Isobutane

Hazard Class 2.1 **N. UN** 1950 Aerosol

Documents of transport:

Documents of boarding.

14.3 Air freight (ICAO/IATA):

Classe: **Shipping description** Isobutane

Hazard Class 2.1 **N. UN** 1950 Aerosol

Documents of transport:

Documents of aerial boarding.

15. REGULATORY INFORMATION**Reg. CE 1272/2008:**

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Extremely flammable.

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.

Version 3:

Date of revision:

10/02/2014

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