

Section 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier****Product name:** REFRIGERANT R600A**REACH registered number(s):** 01-2119485395-27**CAS number:** 75-28-5**EINECS number:** 200-857-2**Product code:** R600A**Synonyms:** ISOBUTANE**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.3. Details of the supplier of the safety data sheet****Company name:** National Refrigerants Ltd

4 Watling Close

Sketchley Meadows Business Park

Hinckley

Leicestershire

LE10 3EZ

United Kingdom

Tel: 01455 630790**Fax:** 01455 630791**Email:** sds@nationalref.com**1.4. Emergency telephone number****Emergency tel:** Carechem24 +44 (0)1865 407333**Section 2: Hazards identification****2.1. Classification of the substance or mixture****Classification under CLP:** Flam. Gas 1: H220; Press. Gas: H280**Most important adverse effects:** Extremely flammable gas. Contains gas under pressure; may explode if heated.**2.2. Label elements****Label elements:****Hazard statements:** H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

Hazard pictograms: GHS02: Flame

GHS04: Gas cylinder



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Signal words: Danger

Precautionary statements: P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381: In case of leakage, eliminate all ignition sources.
P403: Store in a well-ventilated place.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.1. Substances

Chemical identity: REFRIGERANT R600A

CAS number: 75-28-5

EINECS number: 200-857-2

REACH registered number(s): 01-2119485395-27

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Thaw frosted parts with lukewarm water. Do not rub affected area. Do not use hot water. If frostbite has occurred call a physician.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

Ingestion: Ingestion is unlikely due to its physical properties and is not expected to be dangerous. Since this product is a gas, refer to the inhalation section.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. If conscious, ensure the casualty sits or lies down. If unconscious, check for breathing and apply artificial respiration if necessary. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be redness or whiteness of the skin in the area of exposure. Frost-bite may occur causing the affected area to become white and numb.

Eye contact: There may be irritation and pain. The eyes may water profusely. Corneal burns may occur. May cause permanent damage.

Ingestion: Ingestion is unlikely due to the physical properties of the product. As product is a gas refer to inhalation section.

Inhalation: Gas reduces oxygen available for breathing. Causes asphyxiation in high concentrations. The victim will not realize that he/she is suffocating. There may be loss of consciousness.

Delayed / immediate effects: No data available.

[cont...]

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4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: No data available.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Do not extinguish burning gas. cut off source of gas if safe to do so - IF NOT POSSIBLE LEAVE GAS TO BURN. Extinguish secondary fire with: carbon dioxide, Powder, Sand, Foam. Cool cylinders with water spray.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: Extremely flammable. Pressure build up. Fire or intense heat may cause violent rupture of packages. In combustion emits toxic fumes of carbon dioxide / carbon monoxide.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. Eliminate all sources of ignition. Mechanically ventilate the spillage area whilst avoiding the formation of explosive concentrations - see section 9 of SDS. Evacuate the area immediately.

6.2. Environmental precautions

Environmental precautions: Stop release if safe to do so. Prevent from entering sewers, basements and work pits, or any place where the accumulation can be dangerous.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Material evaporates. Ventilate the area, especially low or enclosed places where heavy vapours might collect.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS. Refer to Section 9 of SDS

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Ensure there is exhaust ventilation of the area. Do not handle in a confined space. Earth any equipment used in handling. Smoking is forbidden. Use non-sparking tools.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep away from sources of ignition. Store at a temperature not exceeding 45°C. Avoid incompatible materials and conditions - see section 10 of SDS.

Suitable packaging: Must only be kept in original packaging.

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7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits: No data available.

DNEL/PNEC Values

DNEL / PNEC No data available.

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area. Ensure lighting and electrical equipment are not a source of ignition. Ensure all engineering measures mentioned in section 7 of SDS are in place.

Respiratory protection: Respiratory protection not required. Self-contained breathing apparatus must be available in case of emergency.

Hand protection: Protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Safety glasses with side-shields. Safety goggles. Face-shield.

Skin protection: Protective clothing.

Environmental: Gas escapes to be kept to the minimum by engineering processes and operating methods. Ensure all engineering measures mentioned in section 7 of SDS are in place.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquified gas

Colour: Colourless

Odour: Sweet-smelling

Solubility in water: Slightly soluble

Boiling point/range°C: -12.0

Melting point/range°C: -159.0

Flammability limits %: lower: 1.5

upper: 8.5

Flash point°C: No data available.

Autoflammability°C: 460

Vapour pressure: 3 bar at 20 deg C

Relative density: 2 (Air=1)

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

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10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Can form potential explosive atmosphere in air. May react violently with oxidants.

10.4. Conditions to avoid

Conditions to avoid: Heat. Hot surfaces. Flames. Sources of ignition.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents.

10.6. Hazardous decomposition products

Haz. decomp. products: No data available.

Section 11: Toxicological information

11.1. Information on toxicological effects

Toxicity values: No data available.

Symptoms / routes of exposure

Skin contact: There may be redness or whiteness of the skin in the area of exposure. Frost-bite may occur causing the affected area to become white and numb.

Eye contact: There may be irritation and pain. The eyes may water profusely. Corneal burns may occur. May cause permanent damage.

Ingestion: Ingestion is unlikely due to the physical properties of the product. As product is a gas refer to inhalation section.

Inhalation: Gas reduces oxygen available for breathing. Causes asphyxiation in high concentrations. The victim will not realize that he/she is suffocating. There may be loss of consciousness.

Delayed / immediate effects: No data available.

Other information: Not applicable.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values: No data available.

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available.

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12.4. Mobility in soil

Mobility: Highly volatile.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: No data available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Product evaporates. Recover to a recovery cylinder and return to a refrigerant recovery facility.

Disposal of packaging: Return to supplier.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

14.1. UN number

UN number: UN1969

14.2. UN proper shipping name

Shipping name: ISOBUTANE

14.3. Transport hazard class(es)

Transport class: 2

14.4. Packing group

14.5. Environmental hazards

Environmentally hazardous: No

Marine pollutant: No

14.6. Special precautions for user

Tunnel code: B/D

Transport category: 2

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: This product is a Seveso category/named substance in Annex I of Council Directive 96/82/EC.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

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Section 16: Other information

Other information

Other information: Ensure operators understand the flammability hazard.

This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: H220: Extremely flammable gas.

H280: Contains gas under pressure; may explode if heated.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.