

Refrigerant R600a

Part 1. Chemical Product And Company Identification

Product Name : Refrigerant R600a

Chemical Family : Paraffin Series Hydrocarbon

Producer : Nanjing Refinery Co.,Ltd

Producer Address: Ganjia Xiang 388#, Qixia District , Nanjing, Jiangsu Province, China

For More Information Call : +86-025-58980375

In Case Of Emergency Call : +86-025-58981853

Part 2. Composition/Information On Ingredients

Ingredient Name : Isobutane

%Volume : ≥99.6%

TLV-ACGIH : 1000ppm

CAS Number : 75-28-5

Part3. Hazards Identification

Effects Of Overexposure

Skin Contact : Contact with evaporating liquid can cause frostbite.

Eye Contact: Liquid can cause severe irritation, redness, tearing, blurred vision, and possible freeze burns.

Inhalation : Inhalation of vapor may produce anesthetic and feeling of euphoria. Prolonged overexposure can cause rapid breathing, headache, dizziness, narcosis, unconsciousness, and death from asphyxiation, depending on concentration and time of exposure.

Ingestion : Aspiration Hazard!

Part 4. First Aid Measures

Ingestion : Do not induce vomiting. Contact a physician immediately.

Inhalation : Remove to fresh air. If breathing has stopped, restore breathing at once.

Administer oxygen and get medical help.

Skin Contact : For liquid contact, warm areas gradually and get medical attention if there is evidence of tissue damage. Flush area with plenty of water.

Part 5. Fire Fighting Measures

Safety Data of The Product :

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UN Number	1969	Auto ignition Point	462°C
Relative Density (at 20°C, liquid)	0.557	Vapor Pressure (at 0°C)	1.60×10 ⁵ Pa
Freezing Point	-160°C	Vapor Pressure (at 10°C)	2.25×10 ⁵ Pa
Boiling Point	-11.7°C	Vapor Pressure (at 20°C)	3.08×10 ⁵ Pa
Critical Temperature	135°C	Vapor Pressure (at 30°C)	4.13×10 ⁵ Pa
Critical Pressure	3.65×10 ⁶ Pa	Vapor Pressure (at 40°C)	5.43×10 ⁵ Pa
Relative Vapor Density to Air	2.0	Vapor Pressure (at 50°C)	7.02×10 ⁵ Pa
Flash Point	-83°C		
Explosive Limit (V)	1.8~8.4%(V)		

Extinguishing Media :

Dry Chemical Extinguisher(B-C), Water

Special Fire Fighting Procedures :

Stop the release of materials if possible .Cool the vapor space of the storage container

with water spray. Avoid accumulation of unburned materials. Remove personnel in general area. Observe maximum isolation when extinguishing fire. Expansion of liquid and change of state from liquid to vapor will allow combustible mixture to encompass a large area.

Unusual Fire And Explosion Hazards :

Vapors are heavier than air and may travel along the ground or may be moved by ventilation systems and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge ,or other ignition sources at locations distant from material handling point.

Part.6 Accidental Release Measures

Avoid sources of ignition-Ventilate area. Use water fog to evaporate or ventilate. Protect body against contact with liquid. Use self-contained breathing apparatus in a confined space. Consult local fire authorities.

Part.7 Handling And Storage

Comply with local regulations covering liquefied petroleum gases.

Store small containers in well-ventilated areas, away from heat or sources of ignition.

Prohibit smoking in areas of storage or use.

Part.8 Exposure Controls/Personal Protection

Mechanical : Provide as needed to keep concentration in air below TLV and LEL.

Local Exhaust: Continuous ventilation recommend.

Special: Explosion proof fans and motors.

Safeguard for Eyes: No special protecting measures are required under normal conditions.

Chemical proof safeguard glasses should be worn under special conditions.

Safeguard for Bodies: Wear antistatic suits.

Safeguard for Hands: Wear ordinary proof gloves.

Part.9 Physical And Chemical Properties

Items	Isobutane
Molecular Weight	58.124
Normal Melting Point (in air and at 101.3kPa), K	113.55
Normal Boiling Point (at 101.3kPa), K	261.43
Explosion Limit (at 293.15K and 101.3kPa, in air), %(V)	1.8~8.4
(at 293.15K and 101.3kPa, in oxygen), %(V)	1.8~40
Auto ignition Temperature (at 101.3kPa and in air), K	735.15
Flash Point, K	190
Net Combustion Heat	
(real gas, at 288.7K and 101.3kPa), kJ/mol	2645
(liquid, at its saturation pressure and 298.15K), kJ/mol	2627
ΔH^0_f (ideal gas, at 298.15K), kJ/mol	-134.51
(liquid, at 298.15K), kJ/mol	-158.4
ΔG^0_f (at 298.15K and 101.3kPa), kJ/mol	-20.88
Heat of Melting, kJ/mol	4.540
Heat of Evaporation (at normal boiling point), kJ/mol	21.30
Density (gas, at 288.7K and 101.3kPa), kg/m ³	2.5285
Density (liquid, at its saturation pressure and 298.15K), kg/m ³	551.0
Critical Points	
Pressure, MPa	3.648
Temperature, K	408.13
Density, kg/m ³	221.0
Volume, cm ³ /mol	263
Compressibility Factor	0.283
S^0 (ideal gas, at 298.15K), J/mol·K	295.4
C_p^0 (ideal gas, at 288.7K), J/mol·K	94.16
(ideal gas, at 298.15K), J/mol·K	96.65
C_p^0/C_v^0 (ideal gas, at 288.7K)	1.097
C_v^0 (ideal gas, at 288.7K), J/mol·K	85.85
C_p^0 (liquid, at 288.7K and 101.3kPa), J/mol·K	138.5
Surface Tension (at saturation pressure and 223.15K), mN/m (=dyn/cm)	18.7
(at saturation pressure and 273.15K), mN/m (=dyn/cm)	130
Refractive Index, n_0^{25} (liquid, at saturation pressure)	1.3508

Part10. Stability And Reactivity

Stability: This product is stable.

Incompatibility : None.

Hazardous Decomposition Products: Carbon Monoxide, Volatile Hydrocarbon Vapors.

Hazardous Polymerization : Cannot occur.

Condition To Avoid : High Heat, Sparks and Open Flames.

Part 11.Toxicology Information

No data given.

Part 12.Ecological Information

No data given.

Part 13.Disposal Considerations

Exhaust to atmosphere in safe location or burn it with proper gas jets.

Disposal must comply with local disposal laws.

References

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