SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Issuing Date 21-Aug-2020 **Revision Date** 21-Aug-2020 **Revision Number** 1

1. Identification

Product identifier

Product Name Zephyr Refrigeration Appliance, R600a

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Appliance containing Compressed Gas (not Freon)

Restrictions on use No information available.

Details of the supplier of the safety data sheet

Supplier Address
Zephyr, LLC
2277 Harbor Bay Parkway
Alameda, CA 94501
Phone: 415-282-1211

Emergency telephone number

Emergency telephone 888-880-8368

2. Hazard(s) identification

Classification

This product is an article as defined by the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200) and Canada WHMIS 2015, which includes the amended Hazardous Products Act (HPA). No exposure to hazardous chemicals is expected to occur during intended product use. Misuse of the product may result in exposure to hazards.

Flammable gases	Category 1
Gases under pressure	Compressed gas

Label elements

Danger

Hazard statements
Extremely flammable gas.
Contains gas under pressure; may explode if heated.



Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautionary Statements - Response
.
Skin
Eliminate all ignition sources if safe to do so.
Fire
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Precautionary Statements - Storage
Store in well-ventilated place. Protect from sunlight. Store in a well-ventilated place.

Other information
No information available.

3. Composition/information on ingredients

Substance

Chemical name	CAS No	Weight-%	**Hazardous Material Information Review Act registry number (HMIRA registry #)**	**Date HMIRA filed and date exemption granted (if applicable)**
Isobutane	75-28-5	100	-	-

4. First-aid measures

Description of first aid measures

Inhalation Remove to fresh air.

Eye contact Not an expected route of exposure. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.

Skin contact In case of contact with liquefied gas, thaw frosted parts with lukewarm water.

Ingestion Not an expected route of exposure.

Most important symptoms and effects, both acute and delayed

Symptoms None known.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

Specific hazards arising from the chemical Containers may explode when heated.

Hazardous combustion products Carbon oxides.

Explosion data
Sensitivity to mechanical impact Yes.
Sensitivity to static discharge None.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Remove all sources of ignition. Avoid breathing gas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk.

Methods for cleaning up Stop leak if you can do it without risk. Use non-sparking tools.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Contents under pressure. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Protect from physical damage. Remove all sources of ignition.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a cool, well ventilated area. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Isobutane 75-28-5	STEL: 1000 ppm explosion hazard	-	TWA: 800 ppm TWA: 1900 mg/m^3

Chemical name	Alberta	British Columbia	Ontario	Quebec
Isobutane 75-28-5		STEL: 1000 ppm	STEL: 1000 ppm	

Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	No special protective equipment required. If there is a risk of contact:. Wear safety glasses with side shields (or goggles).
Hand protection	No special protective equipment required. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn.
Skin and body protection	No special protective equipment required.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Solid containing compressed gas
Physical state	Solid
Color	Black
Odor	None
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

Explosive properties	No information available.
Oxidizing properties	No information available.
Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity None under normal use conditions.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Heat, flames and sparks.

Incompatible materials Incompatible with oxidizing agents.

Hazardous decomposition products Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Product Information Exposure is not expected for product under normal conditions of use. In case of exposure:

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available. Contact with liquid may cause cold burns or frostbite.

Skin contact Specific test data for the substance or mixture is not available. Contact with liquid may cause cold burns or frostbite.

Ingestion Specific test data for the substance or mixture is not available. Can burn mouth, throat, and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms None known.

Acute toxicity

Numerical measures of toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Isobutane	-	-	= 658 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity The environmental impact of this product has not been fully investigated.

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
Isobutane 75-28-5	2.88

Mobility in soil No information available.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations, Dispose of waste in accordance with environmental legislation.

Contaminated packaging Dispose of contents/containers in accordance with local regulations.

14. Transport information

DOT This product is not regulated per 49 CFR 173.307(a)(4)(v), when shipped in quantities of 100 g (4 ounces) or less of a flammable, non-toxic liquefied gas

TDG This product is not regulated per TDG Special Provision 104(2), when shipped in quantities of 12 kg (48 ounces) or less of gas

IATA This product is not regulated per IATA Code Special Provision A103, when shipped in quantities of 100 g (4 ounces) or less of a flammable, non-toxic liquefied gas

IMDG This product is not regulated per IMDG Code Special Provision 291, when shipped in quantities of 12 kg (48 ounces) or less of gas

15. Regulatory information

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

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Isobutane 75-28-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	**Health hazards** 0	**Flammability** 4	**Instability** 0	**Physical and chemical properties** -
HMIS	**Health hazards** 0	**Flammability** 0	**Physical hazards** 0	**Personal protection** X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet