A. GENERAL INFORMATION

This product safety summary is intended to provide a general overview of the chemical substance in the context of ICCA global product strategy. It is not intended to provide emergency response, medical or treatment information nor to provide an overview of all safety and health information. This summary is not intended to replace the Safety Data Sheet. For detailed guidance on the use or regulatory status of this substance, please consult the Safety Data Sheet.

Company Name	M/s GUJARAT FLUOROCHEMICALS LIMITED
Address	Survey No 16/3, 26, 27, Ranjitnagar Pin-389 380, Tal. Ghoghamba, Dist. Panchmahals, Gujarat, India
Business Phone	+91 – 2678 – 248107, 248152
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Web Site	www.gfl.co.in

B. CHEMICAL PRODUCT IDENTIFICATION:

Product Name	Difluoromethane
Synonyms	Genetron 32; Methylene difluoride; CH2F2; R 32
IUPAC Name	Difluoromethane
CAS NO	75-10-5
E C No	200-839-4
Molecular Formula	CH_2F_2

C. USES AND APPLICATIONS:

R32 is a HFC refrigerant used as a replacement for R410A in low temperature refrigeration and air conditioning applications.

D. PHYSICAL / CHEMICAL PROPERTIES:

Properties	**Value**
Physical state and appearance	Colorless Liquefied Gas
Odor	Odorless
Molecular Weight	52.03 g/mol

Color:	Colorless
PH (1% soln /water)	No Available
Boiling Point	- 51.6°C at 101 325Pa
Melting Point	-136°C(-212.8°F) at 101 325Pa
Flash Point	No Available
Critical Temperature	78.45°C (173.2°F)
Relative Density	No Available
Vapor Pressure	1 701 kPa at 25°C
Vapor Density	No Available
Volatility	Not available.
Odor Threshold	Not available.
Water/Oil Dist. Coefficient	0.21 at 25°C
Ionicity (in Water)	Not available
Dispersion Properties	Not available

E. HAZARD IDENTIFICATION:

This chemical is considered hazardous by the Regulation (EC) No. 1272/2008 [CLP]

Effect	Value
Acute toxicity	Not Available
Skin corrosion/irritation	May cause frostbite.
Serious eye damage/eye irritation	May cause frostbite.
Respiratory or skin sensitization	Not Available
Germ cell mutagenicity	Not Available
Carcinogenicity	Not Available
Reproductive toxicity	Not Available
Specific target organ toxicity –single exposure	Not Available
Specific target organ toxicity repeated exposure	Not Available
Acute inhalation toxicity	Not Available
Aspiration hazard	No available
Additional Information	Not Available

F. ENVIRONMENTAL EFFECTS:

Effect	Value
Toxicity	Toxicity to Fish LC50 96HR-1731 mg/L Toxicity to Daphnia and other aquatic invertebrateEC50-48HR-833 mg/L Toxicity to Algae ErC50- 72HR-313 mg/L
Persistence and degradability	Difluoromethane, when released to the environment, will partition almost exclusively into the air; it has little tendency to partition to aquatic and terrestrial compartments. The most significant degradation process occurs in the atmospheric compartment.
Bioaccumulative potential	Log Pow = 0.21 Low partition coefficient (octanol-water) indicates the absence of bioaccumulation.
Mobility in soil	No available
Results of PBT and vPvB assessment	Not Available
Other adverse effects	Not Available

G. EXPOSURE:

Effect	Value
Precautions for safe handling	Put on appropriate personal protective equipment. Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Avoid release to the environment. Refer to special instructions/safety data sheet. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Protection against fire and explosion	Not available
Conditions for safe storage, including any incompatibilities	Keep away from open flames, hot surfaces and sources of ignition. Keep in a cool, well-ventilated place. Protect full containers from sources of heat to avoid over pressurization. Keep away from direct sunlight. Containers should not be stored in conditions likely to encourage corrosion. Stored containers should be periodically checked for general conditions and leakage. Store in accordance with local regulations. Store in a

	segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 45 °C (113 °F).
Further information on storage conditions	Not available

H. RISK MANAGEMENT MEASURES:

Effect	Value
Eye/face protection	Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Body Protection	Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

I. PERSONAL PROTECTIVE EQUIPMENT AND EMERGENCY MEASURES:

- ✓ Control parameters
- ✓ Components with workplace control parameters
- ✓ Exposure controls
- ✓ Appropriate engineering controls
- ✓ Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating /lighting/equipments.

J. ACCIDENTAL RELEASE MEASURES:

- ✓ **Personal Precaution, protective equipment and emergency procedure:**
  Avoid contact with skin and eyes. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. In enclosed areas: ventilate or wear a self-contained breathing apparatus (risk of anoxia). Remove all sources of ignition. Do not smoke. Evacuate personnel to safe areas.

- ✓ **Environment Precautions:**
  Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). May be harmful to the environment if released in large quantities.

- ✓ **Methods and materials for containment and cleaning up:**
  Stop leak if easy to do so. Immediately contact emergency personal. Use spark-proof tools and explosion-proof equipment.

K. FIRE FIGHTING MEASURES:

Suitable Extinguishing Media	CO_2, powder or water spray. Fight larger fires with water spray or alcohol resistance foam.

L. CLASSIFICATION AND LABELLING:

Pictogram	
Hazard Statement	**H221** Flammable gas **H280** Contains gas under pressure; may explode if heated
Precautionary Statement	**P202** Do not handle until all safety precautions have been read and understood. **P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. **P501** Dispose of contents/container to an approved waste disposal plant.
Storage	**P410+P403** Protect from sunlight. Store in a well-ventilated place.
Hazard signal	Danger

M. BASIC TRANSPORT INFORMATION:

UN Number	UN 3252
1 UN Proper Shipping Name	DIFLUOROMETHANE (REFRIGERANT GAS R32)
Transport hazard class (es)	2.1
Packaging Group	-

Environmental hazards	No

N. REGULATORY INFORMATION :

International Inventories	**Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture**
TSCA	**Complies**
EINECS/ ELINCS	**Complies**
DSL/NDSL	**Complies**
PICCS	**Complies**
ENCS	**Complies**
IECSC	**Complies**
AICS KECL	**Complies**
Legend	
TSCA	United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL	Domestic Substances List/ Non-Domestic Substances List
EINECS/ELINCS	European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
PICCS	Philippines Inventory of Chemicals and Chemical Substances
ENCS	Japan Existing and New Chemical Substances
IECSC	China Inventory of Existing Chemical Substances
AICS	Australian Inventory of Chemical Substances
KECL	Korean Existing and Evaluated Chemical Substances

O. CONCLUSIONS:

R32 is a HFC refrigerant, used as a replacement for R410A in low temperature refrigeration and air conditioning applications.

P. CONTACT INFORMATION:

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Q. DISCLAIMER:

- ✓ The above information and recommendations provided in GPS safety summary only concern to the specific product as described above and may not apply for the same material if used in combination with any other material or any process.
- ✓ They are in good faith as recommendations only and based on data which is available globally. GFL Gujarat Fluorochemicals Ltd not imply any guarantee concerning the accuracy and validity and accepts no responsibility for any damage or loss that might arise in connection with then use of this material.