

### SECTION 1: Identification

#### 1.1. Identification

|                               |   |                             |
|-------------------------------|---|-----------------------------|
| Product form                  | : | Substance                   |
| Substance name                | : | 1,1-Dichloro-1-fluoroethane |
| Chemical name                 | : | 1,1-dichloro-1-fluoroethane |
| CAS-No.                       | : | 1717-00-6                   |
| Product code                  | : | 1100-7-21                   |
| Formula                       | : | C2H3Cl2F                    |
| Other means of identification | : | MFCD00042461                |

#### 1.2. Recommended use and restrictions on use

|                              |   |  |
|------------------------------|---|--|
| Use of the substance/mixture | : | Laboratory chemicals<br>Manufacture of substances<br>Scientific research and development |
|------------------------------|---|--|

#### 1.3. Supplier

SynQuest Laboratories, Inc.  
 P.O. Box 309  
 Alachua, FL 32615 - United States of America  
 T (386) 462-0788 - F (386) 462-7097  
[info@synquestlabs.com](mailto:info@synquestlabs.com) - [www.synquestlabs.com](http://www.synquestlabs.com)

#### 1.4. Emergency telephone number

|                  |   |   |
|------------------|---|---|
| Emergency number | : | (844) 523-4086 (3E Company - Account 10069) |
|------------------|---|---|

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

|   |      |   |
|---|------|---|
| Gases under pressure Liquefied gas  | H280 | Contains gas under pressure; may explode if heated                                  |
| Skin corrosion/irritation Category 2  | H315 | Causes skin irritation  |
| Serious eye damage/eye irritation Category 2A   | H319 | Causes serious eye irritation   |
| Specific target organ toxicity – Single exposure, Category 3,<br>Respiratory tract irritation | H335 | May cause respiratory irritation  |
| Hazardous to the aquatic environment – Chronic Hazard Category 3                              | H412 | Harmful to aquatic life with long lasting effects                                   |
| Hazardous to the ozone layer Category 1   | H420 | Harms public health and the environment by destroying ozone in the upper atmosphere |

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Warning

Hazard statements (GHS US)

: H280 - Contains gas under pressure; may explode if heated  
 H315 - Causes skin irritation

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|                                   |  |
|-----------------------------------|--|
| Precautionary statements (GHS US) | : H319 - Causes serious eye irritation<br>H335 - May cause respiratory irritation<br>H412 - Harmful to aquatic life with long lasting effects<br>H420 - Harms public health and the environment by destroying ozone in the upper atmosphere<br>P261 - Avoid breathing fumes, gas, mist, spray, vapors.<br>P264 - Wash skin thoroughly after handling<br>P271 - Use only outdoors or in a well-ventilated area.<br>P273 - Avoid release to the environment.<br>P280 - Wear protective gloves/protective clothing/eye protection/face protection.<br>P302+P352 - If on skin: Wash with plenty of soap and water<br>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.<br>P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P312 - Call a POISON CENTER or doctor/physician if you feel unwell<br>P321 - Specific treatment (see supplemental first aid instructions on this label)<br>P332+P313 - If skin irritation occurs: Get medical advice/attention.<br>P337+P313 - If eye irritation persists: Get medical advice/attention.<br>P362+P364 - Take off contaminated clothing and wash it before reuse.<br>P403+P233 - Store in a well-ventilated place. Keep container tightly closed.<br>P405 - Store locked up.<br>P410+P403 - Protect from sunlight. Store in a well-ventilated place.<br>P501 - Dispose of contents/container to an approved waste disposal plant<br>P502 - Refer to manufacturer/supplier for information on recovery/recycling |
|-----------------------------------|--|

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type : Mono-constituent

| Name  | Product identifier | %     | GHS US classification  |
|---|--------------------|-------|--|
| 1,1-Dichloro-1-fluoroethane<br>(Main constituent) | CAS-No.: 1717-00-6 | ≤ 100 | Press. Gas (Liq.), H280<br>Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319<br>STOT SE 3, H335<br>Aquatic Chronic 3, H412<br>Ozone 1, H420 |

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Move the affected personnel away from the contaminated area.

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|                                       |   |
|---------------------------------------|---|
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Get immediate medical advice/attention.   |
| First-aid measures after skin contact | : Wash with plenty of soap and water. Get medical advice/attention.   |
| First-aid measures after eye contact  | : Remove contact lenses, if present and easy to do. Continue rinsing. Immediately flush eyes thoroughly with water for at least 15 minutes. Get medical advice/attention.                                     |
| First-aid measures after ingestion    | : Due to its physical form, exposure to this chemical is not likely. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention. |

### 4.2. Most important symptoms and effects (acute and delayed)

|                                     |  |
|-------------------------------------|--|
| Symptoms/effects                    | : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.                     |
| Symptoms/effects after inhalation   | : May cause drowsiness or dizziness.   |
| Symptoms/effects after skin contact | : Contact with the liquid may cause cold burns/frostbite.  |
| Symptoms/effects after eye contact  | : Direct contact with the liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation. |

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

### 5.2. Specific hazards arising from the chemical

|                  |  |
|------------------|--|
| Fire hazard      | : Thermal decomposition generates: Carbon oxides. Hydrogen chloride. Hydrogen fluoride.  |
| Explosion hazard | : Contains gas under pressure; may explode if heated. Use water spray or fog for cooling exposed containers. May form flammable/explosive vapor-air mixture. |

### 5.3. Special protective equipment and precautions for fire-fighters

|                                |  |
|--------------------------------|--|
| Firefighting instructions      | : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.  |
| Protection during firefighting | : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. For further information refer to section 8: "Exposure controls/personal protection". |

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate unnecessary personnel. Ensure adequate air ventilation. May cause suffocation by reducing oxygen available for breathing. Do not breathe gas, fumes, vapor or spray.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level. Consider the risk of potentially explosive atmospheres. Eliminate every possible source of ignition.

### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

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### 6.3. Methods and material for containment and cleaning up

- For containment : Stop leak if safe to do so.  
Methods for cleaning up : Ventilate area.  
Other information : For disposal of solid materials or residues refer to section 13 : "Disposal considerations".

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

- Additional hazards when processed : Pressurized container: Do not pierce or burn, even after use. Handle empty containers with care because residual vapors are flammable. Close valve after each use and when empty.  
Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Ensure good ventilation of the work station. Do not breathe fumes, gas, mist, spray, vapors. Wear personal protective equipment. Avoid contact with skin and eyes. Keep away from ignition sources (including static discharges). Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools.  
Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.  
Storage conditions : Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Keep container closed when not in use. Keep away from ignition sources.  
Incompatible materials : Refer to Section 10 on Incompatible Materials.  
Storage area : Store in dry, cool, well-ventilated area.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 1,1-Dichloro-1-fluoroethane (1717-00-6)

#### USA - AIHA - Occupational Exposure Limits

|                 |                        |
|-----------------|------------------------|
| WEEL TWA [ppm]  | 500 ppm                |
| WEEL STEL [ppm] | 3000 ppm (5-min. STEL) |

### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Systems under pressure should be regularly checked for leakage. Oxygen detectors should be used when asphyxiating gases may be released.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

protective gloves. 29 CFR 1910.138: Hand Protection

#### Eye protection:

Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and Face Protection

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### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

In case of inadequate ventilation wear respiratory protection. 29 CFR 1910.134: Respiratory Protection

### Thermal hazard protection:

Cold insulating gloves.

### Other information:

Safety shoes. 29 CFR 1910.136: Foot Protection.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|   |                       |
|---|-----------------------|
| Physical state                                  | : Liquid              |
| Color   | : No data available   |
| Odor  | : No data available   |
| Odor threshold                                  | : No data available   |
| pH  | : No data available   |
| Melting point                                   | : -103.5 °C           |
| Freezing point                                  | : No data available   |
| Boiling point                                   | : 32 °C               |
| Flash point                                     | : No data available   |
| Relative evaporation rate (butyl acetate=1)     | : No data available   |
| Flammability (solid, gas)                       | : No data available   |
| Vapor pressure                                  | : 69 kPa (@ 20 °C)    |
| Relative vapor density at 20 °C                 | : No data available   |
| Relative density                                | : No data available   |
| Density   | : 1.25 g/ml (@ 10 °C) |
| Molecular mass                                  | : 116.95 g/mol        |
| Solubility                                      | : No data available   |
| Partition coefficient n-octanol/water (Log Pow) | : No data available   |
| Auto-ignition temperature                       | : No data available   |
| Decomposition temperature                       | : No data available   |
| Viscosity, kinematic                            | : No data available   |
| Viscosity, dynamic                              | : No data available   |
| Explosion limits                                | : No data available   |
| Explosive properties                            | : No data available   |
| Oxidizing properties                            | : No data available   |

### 9.2. Other information

Refractive index : 1.36 @10 C

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

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### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Keep away from heat, sparks and flame.

### 10.5. Incompatible materials

Alkali metals. Finely divided metals (Al, Mg, Zn). Strong bases. Strong oxidizing agents.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products in case of fire, see Section 5.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

#### 1,1-Dichloro-1-fluoroethane (1717-00-6)

|                             |                                |
|-----------------------------|--------------------------------|
| LD50 oral rat               | > 5 g/kg                       |
| LC50 Inhalation - Rat [ppm] | 56700 ppm (Exposure time: 6 h) |

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : May cause respiratory irritation.

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

Symptoms/effects after inhalation : May cause drowsiness or dizziness.

Symptoms/effects after skin contact : Contact with the liquid the may cause cold burns/frostbite.

Symptoms/effects after eye contact : Direct contact with the liquefied gas may cause severe and possibly permanent eye injury due to frostbite from rapid liquid evaporation.

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

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### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other information : Class II ozone-depleting substance.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

No additional information available

## SECTION 14: Transport information

### 14.1. UN number

DOT NA No : UN1029  
UN-No. (TDG) : Not applicable  
UN-No. (IMDG) : 1029  
UN-No. (IATA) : 1029

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Dichlorofluoromethane  
Proper Shipping Name (TDG) : Not applicable  
Proper Shipping Name (IMDG) : DICHLOROFLUOROMETHANE (REFRIGERANT GAS R 21)  
Proper Shipping Name (IATA) : Dichlorofluoromethane

### 14.3. Transport hazard class(es)

#### DOT

Transport hazard class(es) (DOT) : 2.2  
Hazard labels (DOT) : 2.2



#### TDG

Transport hazard class(es) (TDG) : Not applicable

#### IMDG

Transport hazard class(es) (IMDG) : 2.2  
Hazard labels (IMDG) : 2.2



#### IATA

Transport hazard class(es) (IATA) : 2.2  
Hazard labels (IATA) : 2.2

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### 14.4. Packing group

|                      |                  |
|----------------------|------------------|
| Packing group (DOT)  | : Not applicable |
| Packing group (TDG)  | : Not applicable |
| Packing group (IMDG) | : Not applicable |
| Packing group (IATA) | : Not applicable |

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### DOT

|  |  |
|--|--|
| UN-No.(DOT)  | : UN1029   |
| DOT Special Provisions (49 CFR 172.102)                          | : T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter. |
| DOT Packaging Exceptions (49 CFR 173.xxx)                        | : 306  |
| DOT Packaging Non Bulk (49 CFR 173.xxx)                          | : 304  |
| DOT Packaging Bulk (49 CFR 173.xxx)                              | : 314, 315   |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 75 kg  |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)     | : 150 kg   |
| DOT Vessel Stowage Location                                      | : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.  |

#### TDG

Emergency Response Guide (ERG) Number : 126

#### IMDG

|                                    |   |
|------------------------------------|---|
| Limited quantities (IMDG)          | : 120 ml  |
| Excepted quantities (IMDG)         | : E1  |
| Packing instructions (IMDG)        | : P200  |
| Tank instructions (IMDG)           | : T50   |
| EmS-No. (Fire)                     | : F-C - FIRE SCHEDULE Charlie - NON-FLAMMABLE GASES   |
| EmS-No. (Spillage)                 | : S-V - SPILLAGE SCHEDULE Victor - GASES (NON-FLAMMABLE, NON-TOXIC)   |
| Stowage category (IMDG)            | : A   |
| Properties and observations (IMDG) | : Liquefied, non-flammable gas with a chloroform-like odour. Much heavier than air (3.6). Boiling point: 9°C. |

#### IATA

|  |             |
|--|-------------|
| PCA Excepted quantities (IATA)               | : E1        |
| PCA Limited quantities (IATA)                | : Forbidden |
| PCA limited quantity max net quantity (IATA) | : Forbidden |
| PCA packing instructions (IATA)              | : 200       |
| PCA max net quantity (IATA)                  | : 75kg      |
| CAO packing instructions (IATA)              | : 200       |
| CAO max net quantity (IATA)                  | : 150kg     |
| ERG code (IATA)                              | : 2L        |

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### 1,1-Dichloro-1-fluoroethane (1717-00-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Subject to reporting requirements of United States SARA Section 313

#### 15.2. International regulations

##### CANADA

##### 1,1-Dichloro-1-fluoroethane (1717-00-6)

Listed on the Canadian DSL (Domestic Substances List)

##### EU-Regulations

##### 1,1-Dichloro-1-fluoroethane (1717-00-6)

Listed on ELINCS (European List of Notified Chemical Substances)

##### National regulations

##### 1,1-Dichloro-1-fluoroethane (1717-00-6)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory  
Listed on the Japanese ISHL (Industrial Safety and Health Law)  
Listed on KECL/KECI (Korean Existing Chemicals Inventory)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Japanese Pollutant Release and Transfer Register Law (PRTR Law)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

#### 15.3. US State regulations

##### 1,1-Dichloro-1-fluoroethane (1717-00-6)

|                            |  |
|----------------------------|--|
| State or local regulations | U.S. - New Jersey - Right to Know Hazardous Substance List |
|----------------------------|--|

### SECTION 16: Other information

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Revision date : 09/02/2022

| Full text of H-phrases |   |
|------------------------|---|
| H280                   | Contains gas under pressure; may explode if heated                                  |
| H315                   | Causes skin irritation  |
| H319                   | Causes serious eye irritation   |
| H335                   | May cause respiratory irritation  |
| H412                   | Harmful to aquatic life with long lasting effects                                   |
| H420                   | Harms public health and the environment by destroying ozone in the upper atmosphere |

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