

## SAFETY DATA SHEET

### SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name :** Ethyl difluoroacetate (C<sub>4</sub>H<sub>6</sub>F<sub>2</sub>O<sub>2</sub>)  
**Synonyms :** Difluoroacetic acid ethyl ester (EDFA)  
**Manufacturer/Supplier Name :** M/s GUJARAT FLUORO CHEMICALS LIMITED  
**Address :** Survey No 16/3, 26, 27, Ranjitnagar Pin-389 380,  
Tal. Ghoghamba, Dist. Panchmahal, Gujarat, India  
**Business Phone :** +91 – 2678 – 248107, 248152  
**Business Fax :** +91 – 2678 – 248153  
**Web Site :** [www.gfl.co.in](http://www.gfl.co.in)

### SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

#### 2.1 Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008

Flammable liquids  
 (Category 3), H226 Skin  
 corrosion (Category 1B),  
 H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

##### Classification according to EU Directives 67/548/EEC or 1999/45/EC

C Corrosive R10, R34

For the full text of the R-phrases mentioned in this Section, see Section 16.

#### 2.2 Label elements

##### Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Danger

Hazard statement(s)

H226

Flammable liquid and vapour.

H314

Causes severe skin burns and eye damage.

Precautionary statement(s)

P280

Wear protective gloves/ protective clothing/ eye protection/ protection.

face

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove Contact lenses, if present and easy to do. Continue rinsing.

P310

Immediately call a POISON CENTER or doctor/ physician.

Supplemental Hazard Statements

none

Other hazards - none

### SECTION 3: HAZARDS IDENTIFICATION

#### 3.1 Substances

Formula : C<sub>4</sub>H<sub>6</sub>F<sub>2</sub>O<sub>2</sub>  
 Molecular Weight : 124.09 g/mol

CAS-No. : 454-31-9  
EC-No. : 207-223-4

#### Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
<b>Ethyl difluoroacetate</b>			
CAS-No.	454-31-9	Flam. Liq. 3; Skin Corr. 1B; H226, H314	<= 100 %
EC-No.	207-223-4		

#### Hazardous ingredients according to Directive 1999/45/EC

Component		Classification	Concentration
<b>Ethyl difluoroacetate</b>			
CAS-No.	454-31-9	C, R10 - R34	<= 100 %
EC-No.	207-223-4		

**Emergency Overview:** Does not present any significant health hazards. Wash areas of contact with water

**Target Organs:** eyes, skin

**Eye Contact:** May cause slight irritation.

**Inhalation:** Not likely to be hazardous by inhalation.

**Skin Contact:** May cause slight irritation.

**Ingestion:** Large doses may cause stomach upset, substance has low toxicity by ingestion.

**Chronic Effects/Carcinogenicity:** None

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11

**Indication of any immediate medical attention and special treatment needed** no data available

## SECTION 5: FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected

containers with flooding quantities of water.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides, Hydrogen fluoride

**5.3 Advice for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information**

Use water spray to cool unopened containers.

---

 **SECTION 6: ACCIDENTAL RELEASE MEASURES**

---

**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

**6.2 Accidentally Leakage / Release:** Absorb with suitable material and treat as normal refuse.

Small amounts of the liquid may be flushed to the drain with excess water. Always dispose of in accordance with local regulations.

**6.3 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**6.4 Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

---

 **SECTION 7: HANDLING AND STORAGE SECTION**

---

**Precautions for safe handling**

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. For precautions see section 2.2

**7.1 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**7.2 Specific end use(s)**

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

---

 **SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION**

---

**8.1 Control parameters**

**Components with workplace control parameters**

**8.2 Exposure controls**

**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**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**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

#### **Body Protection**

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |   |                                    |
|---|------------------------------------|
| a) Appearance                                   | Form: liquid<br>Colour: colourless |
| b) Odour  | Sweet ether like                   |
| c) Odor Threshold                               | no data available                  |
| d) pH   | no data available                  |
| e) Melting point/freezing point                 | no data available                  |
| f) Initial boiling point and boiling range      | 99.2 °C - lit.                     |
| g) Flash point                                  | 23.9 °C - closed cup               |
| h) Evaporation rate                             | no data available                  |
| i) Flammability (solid, gas)                    | no data available                  |
| j) Upper/lower flammability or explosive limits | no data available                  |
| k) Vapour pressure                              | no data available                  |
| l) Vapour density                               | no data available                  |
| m) Relative density                             | 1.18 g/cm <sup>3</sup> at 25 °C    |
| n) Water solubility                             | no data available                  |
| o) Partition coefficient: n-octanol/water       | no data available                  |
| p) Auto-ignition temperature                    | no data available                  |
| q) Decomposition temperature                    | no data available                  |
| r) Viscosity                                    | no data available                  |
| s) Explosive properties                         | no data available                  |
| t) Oxidizing properties                         | no data available                  |

### 9.2 Other safety information no data available

---

## SECTION 10: STABILITY AND REACTIVITY

---

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

**Other decomposition products** - no data available In the event of fire: see section 5  
Hazardous Decomposition Products: Burning may produce Carbon Monoxide, Carbon Dioxide and Nitrogen Oxides.

**Hazardous Polymerization:** Will not occur

---

## SECTION 11: TOXICOLOGICAL INFORMATION

---

### 11.1 Information on toxicological effects

**Acut toxicity** no data available

**Skin corrosion/irritation** no data available

**Serious eye damage/eye irritation** no data available

**Respiratory or skin sensitization** no data available

**Germ cell mutagenicity** no data available

#### **Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity** no data available

**Specific target organ toxicity - single exposure** no data available

**Specific target organ toxicity - repeated exposure** no data available

**Aspiration hazard** no data available

#### **Additional Information**

RTECS: Not available material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

---

## SECTION 12: ECOLOGICAL INFORMATION

---

**Toxicity** no data available

12.1 **Persistence and degradability** no data available

12.2 **Bio accumulative potential** no data available

12.3 **Mobility in soil** no data available

#### 12.4 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### 12.5 Other adverse effects no data available

---

### SECTION 13: DISPOSAL CONSIDERATIONS

---

#### 13.1 Waste treatment methods

##### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

##### Contaminated packaging

Dispose of as unused product.

---

### SECTION 14: TRANSPORT INFORMATION

---

#### UN number

ADR/RID: 2924

IMDG: 2924

IATA: 2924

#### 14.2 UN proper shipping name

ADR/RID: Flammable Liquid, Corrosive, N.O.S. (Ethyl difluoroacetate)

IMDG: Flammable Liquid, Corrosive, N.O.S. (Ethyl difluoroacetate)

IATA: Flammable liquid, corrosive, n.o.s. (Ethyl difluoroacetate)

#### 14.3 Transport hazard class(es)

ADR/RID: 3 (8)

IMDG: 3 (8)

IATA: 3 (8)

#### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

#### 14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

#### 14.6 Special precautions for user : No data available

---

### SECTION 15: REGULATORY INFORMATION

---

**US FEDERAL TSCA** CAS# 454-31-9 is listed on the TSCA inventory.

**Health & Safety Reporting List** None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules** None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b** None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule** None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs** None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances** None of the chemicals in this product have a TPQ.

**Section 313** No chemicals are reportable under Section 313.

**Clean Air Act:** This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

**Clean Water Act:** None of the chemicals in this product are listed as Hazardous Substances under

the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:** None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE** CAS# 454-31-9 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65** California No Significant Risk Level: None of the chemicals in this product are listed.

#### **European/International Regulations European Labeling in Accordance with EC Directives**

**Hazard Symbols:** C

**Risk Phrases:** R 10 Flammable. R 34 Causes burns.

**Safety Phrases:** S 16 Keep away from sources of ignition - No smoking. S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)** CAS# 454-31-9: No information available.

**Canada – DSL / NDSL** CAS# 454-31-9 is listed on Canada's NDSL List.

#### **Canada - WHMIS**

WHMIS: Not available. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations

---

### **SECTION – 16 : ADDITIONAL INFORMATION**

**References:** Not available.

**Other Special Considerations:** Not available.

**Created:** 25/01/2017 17:00 hrs

**Last Updated:** - 19/12/2017 15:30 hrs

#### **Further Information:**

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the Composition and hazards of the product. Since conditions of use are outside our control, we make no Warranties, express or implied, and assume no liability in connection with any use of this information