

# Safety Data Sheet

acc. to OSHA HCS

Printing date 11/25/2015

Reviewed on 11/25/2015

## 1 Identification

- **Product identifier**
- **Trade name:** DUST-OFF FGSA MODEL
- **Article number:** 70705, 70706, 70707
- **CAS Number:**  
75-37-6
- **EC number:**  
200-866-1
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapor.

Press. Gas H280 Contains gas under pressure; may explode if heated.

- **Label elements**

- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
Contains gas under pressure; may explode if heated.  
Extremely flammable liquid and vapor.
- **Precautionary statements**  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Use explosion-proof electrical/ventilating/lighting/equipment.  
Wear protective gloves / eye protection / face protection.  
Ground/bond container and receiving equipment.  
Keep container tightly closed.  
Use only non-sparking tools.

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Take precautionary measures against static discharge.

**IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**In case of fire: Use for extinction:** CO<sub>2</sub>, powder or water spray.

Protect from sunlight.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

75-37-6 1,1-difluoroethane

· **Identification number(s)**

· **EC number:** 200-866-1

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards arising from the substance or mixture** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

**Form:** Compressed gas  
**Color:** Clear

· **Odor:** Ether-like

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

**Melting point/Melting range:** -117 °C (-179 °F)  
**Boiling point/Boiling range:** -26.5 °C (-16 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:**

**Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

**Lower:** 4.9 Vol %  
**Upper:** 20.2 Vol %

· **Vapor pressure at 20 °C (68 °F):** 5100 hPa (3825 mm Hg)

· **Density at 20 °C (68 °F):** 2.4 g/cm<sup>3</sup> (20.028 lbs/gal)

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

**Water at 20 °C (68 °F):** 5 g/l

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- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not determined.
  - Kinematic:** Not determined.
  - Organic solvents:** 0.0 %
- **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· <b>LD/LC50 values that are relevant for classification:</b>
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75-37-6 1,1-difluoroethane
----------------------------

Inhalative	LC50/4 h	977 mg/l (mouse)
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- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

- **Carcinogenic categories**

· <b>IARC (International Agency for Research on Cancer)</b>
---

Substance is not listed.
--------------------------

· <b>NTP (National Toxicology Program)</b>
--

Substance is not listed.
--------------------------

· <b>OSHA-Ca (Occupational Safety Health Administration)</b>
--

Substance is not listed.
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## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |   |   |
|---|---|
| · <b>UN-Number</b>  |   |
| · <b>DOT, ADR, IMDG, IATA</b>   | UN1030                                      |
| · <b>UN proper shipping name</b>  |   |
| · <b>DOT</b>  | 1,1-Difluoroethane                          |
| · <b>ADR</b>  | 1030 1,1-Difluoroethane                     |
| · <b>IMDG, IATA</b>   | 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A) |
| · <b>Transport hazard class(es)</b>   |   |
| · <b>DOT</b>  |   |
|  |   |
| · <b>Class</b>  | 2 Gases                                     |
| · <b>Label</b>  | 2.1   |
| · <b>ADR</b>  |   |
|  |   |
| · <b>Class</b>  | 2 2F Gases                                  |
| · <b>Label</b>  | 2.1   |
| · <b>IMDG</b>   |   |
|  |   |
| · <b>Class</b>  | 2.1   |

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· <b>Label</b>	2.1
· <b>IATA</b>	
	
· <b>Class</b>	2 Gases
· <b>Label</b>	2.1
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	Void
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Gases
· <b>Danger code (Kemler):</b>	23
· <b>EMS Number:</b>	F-D,S-U
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: Forbidden On cargo aircraft only: 150 kg
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>UN "Model Regulation":</b>	UN1030, 1,1-Difluoroethane, 2.1

## 15 Regulatory information

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

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

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· <b>Chemicals known to cause reproductive toxicity for females:</b>
Substance is not listed.

· <b>Chemicals known to cause reproductive toxicity for males:</b>
Substance is not listed.

· <b>Chemicals known to cause developmental toxicity:</b>
Substance is not listed.

· <b>Carcinogenic categories</b>
· <b>EPA (Environmental Protection Agency)</b>
Substance is not listed.

· <b>TLV (Threshold Limit Value established by ACGIH)</b>
Substance is not listed.

· <b>NIOSH-Ca (National Institute for Occupational Safety and Health)</b>
Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** *Danger*

· **Hazard statements**

Contains gas under pressure; may explode if heated.

Extremely flammable liquid and vapor.

· **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Wear protective gloves / eye protection / face protection.

Ground/bond container and receiving equipment.

Keep container tightly closed.

Use only non-sparking tools.

Take precautionary measures against static discharge.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of fire: Use for extinction: CO2, powder or water spray.

Protect from sunlight.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 11/25/2015 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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*IATA: International Air Transport Association**ACGIH: American Conference of Governmental Industrial Hygienists**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**Press. Gas: Gases under pressure: Liquefied gas**Flam. Liq. 1: Flammable liquids, Hazard Category 1*

US

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 25.11.2015

Revision: 25.11.2015

## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** DUST-OFF FGSA MODEL
- **Article number:** 70705, 70706, 70707
- **CAS Number:**  
75-37-6
- **EC number:**  
200-866-1
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- ProSciTech Pty Ltd  
11 Carlton Street, Kirwan QLD 4817 Australia  
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
- Emgrid Australia Pty. Ltd.  
P.O. Box 118  
The Patch VIC 3792  
Australia  
Tel: 03 9752 1785  
Fax: 03 9752 1784  
Website: www.emgrid.com.au
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazards identification

- **Classification of the substance or mixture**



GHS02 flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.

Press. Gas L H280 Contains gas under pressure; may explode if heated.

- **Label elements**
- **GHS label elements**  
The substance is classified and labelled according to the Globally Harmonised System (GHS).

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# Safety data sheet

according to 1907/2006/EC, Article 31

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Trade name: **DUST-OFF FGSA MODEL**

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· **Hazard pictograms**

GHS02

· **Signal word** *Danger*· **Hazard statements**

*Contains gas under pressure; may explode if heated.*  
*Extremely flammable liquid and vapour.*

· **Precautionary statements**

*Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Wear protective gloves / eye protection / face protection.*

*Ground/bond container and receiving equipment.*

*Keep container tightly closed.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*In case of fire: Use for extinction: CO2, powder or water spray.*

*Protect from sunlight.*

*Store in a well-ventilated place. Keep cool.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Other hazards**· **Results of PBT and vPvB assessment**

· **PBT:** *Not applicable.*

· **vPvB:** *Not applicable.*

### 3 Composition/information on ingredients

· **Chemical characterisation:** *Substances*· **CAS No. Description**

*75-37-6 1,1-difluoroethane*

· **Identification number(s)**

· **EC number:** *200-866-1*

### 4 First aid measures

· **Description of first aid measures**

· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*

· **After skin contact:** *Generally the product does not irritate the skin.*

· **After eye contact:** *Rinse opened eye for several minutes under running water.*

· **After swallowing:** *If symptoms persist consult doctor.*

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*

· **Indication of any immediate medical attention and special treatment needed**

*No further relevant information available.*

AU

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**Safety data sheet**  
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Revision: 25.11.2015

Trade name: **DUST-OFF FGSA MODEL**

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### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Do not seal receptacle gas tight.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.

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# Safety data sheet

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Revision: 25.11.2015

Trade name: **DUST-OFF FGSA MODEL**

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- |  |   |
|--|---|
| · <b>Information on basic physical and chemical properties</b> |   |
| · <b>General Information</b>                                   |   |
| · <b>Appearance:</b>   |   |
| Form:  | Compressed gas  |
| Colour:  | Clear   |
| · <b>Odour:</b>  | Ether-like  |
| · <b>Odour threshold:</b>                                      | Not determined.   |
| · <b>pH-value:</b>   | Not determined.   |
| · <b>Change in condition</b>                                   |   |
| Melting point/Melting range:                                   | -117 °C   |
| Boiling point/Boiling range:                                   | -26.5 °C  |
| · <b>Flash point:</b>  | Not applicable.   |
| · <b>Flammability (solid, gaseous):</b>                        | Not applicable.   |
| · <b>Ignition temperature:</b>                                 |   |
| Decomposition temperature:                                     | Not determined.   |
| · <b>Self-igniting:</b>  | Not determined.   |
| · <b>Danger of explosion:</b>                                  | Product is not explosive. However, formation of explosive air/vapour mixtures are possible. |
| · <b>Explosion limits:</b>                                     |   |
| Lower:   | 4.9 Vol %   |
| Upper:   | 20.2 Vol %  |
| · <b>Vapour pressure at 20 °C:</b>                             | 5100 hPa  |
| · <b>Density at 20 °C:</b>                                     | 2.4 g/cm <sup>3</sup>   |

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· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water at 20 °C:</b>	5 g/l
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	0.0 %
<b>VOC (EC)</b>	100.00 %
· <b>Other information</b>	No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values relevant for classification:**

75-37-6 1,1-difluoroethane

Inhalative	LC50/4 h	977 mg/l (mouse)
------------	----------	------------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water

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- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

- |  |  |
|--|--|
| · <b>UN-Number</b>                         |  |
| · <b>ADG, IMDG, IATA</b>                   | UN1030   |
| · <b>UN proper shipping name</b>           |  |
| · <b>ADG</b>                               | 1030 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A) |
| · <b>IMDG, IATA</b>                        | 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)      |
| · <b>Transport hazard class(es)</b>        |  |
| · <b>ADG</b>                               |  |
|  |  |
| · <b>Class</b>                             | 2 2F Gases.                                      |
| · <b>Label</b>                             | 2.1  |
| <hr style="border-top: 1px dashed #000;"/> |  |
| · <b>IMDG</b>                              |  |
|  |  |
| · <b>Class</b>                             | 2.1  |
| · <b>Label</b>                             | 2.1  |
| <hr style="border-top: 1px dashed #000;"/> |  |
| · <b>IATA</b>                              |  |
|  |  |
| · <b>Class</b>                             | 2 Gases.   |
| · <b>Label</b>                             | 2.1  |
| · <b>Packing group</b>                     |  |
| · <b>ADG, IMDG, IATA</b>                   | Void   |

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· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Gases.
· <b>Danger code (Kemler):</b>	23
· <b>EMS Number:</b>	F-D,S-U
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>Transport category</b>	2
· <b>Tunnel restriction code</b>	B/D
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>UN "Model Regulation":</b>	UN1030, 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A), 2.1

### 15 Regulatory information

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

· **Australian Inventory of Chemical Substances**

Substance is listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

Substance is not listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** Danger

· **Hazard statements**

Contains gas under pressure; may explode if heated.

Extremely flammable liquid and vapour.

· **Precautionary statements**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Use explosion-proof electrical/ventilating/lighting/equipment.

Wear protective gloves / eye protection / face protection.

Ground/bond container and receiving equipment.

Keep container tightly closed.

Use only non-sparking tools.

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*Take precautionary measures against static discharge.*

*IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Protect from sunlight.*

*Store in a well-ventilated place. Keep cool.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*VOC: Volatile Organic Compounds (USA, EU)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*Press. Gas L: Gases under pressure: Liquefied gas*

*Flam. Liq. 1: Flammable liquids, Hazard Category 1*

AU

# Safety Data Sheet

acc. to OSHA HCS

Printing date 11/25/2015

Reviewed on 11/25/2015

## 1 Identification

- **Product identifier**
- **Trade name:** DUST-OFF FGSA MODEL
- **Article number:** 70705, 70706, 70707
- **CAS Number:**  
75-37-6
- **EC number:**  
200-866-1
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapor.

Press. Gas H280 Contains gas under pressure; may explode if heated.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Not applicable.



Extremely flammable

Extremely flammable.

Risk of explosion if heated under confinement.

- **Information concerning particular hazards for human and environment:** Not applicable.

- **Label elements**

- **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

- **Code letter and hazard designation of product:**



Extremely flammable

- **Risk phrases:**

Extremely flammable.

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**Trade name: DUST-OFF FGSA MODEL**

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*Risk of explosion if heated under confinement.*

· **Safety phrases:**

*Keep in a cool place.*

*Keep away from heat.*

*Keep away from sources of ignition - No smoking.*

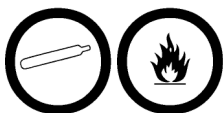
*This material and its container must be disposed of as hazardous waste.*

· **Hazard description:**

· **WHMIS-symbols:**

A - Compressed gas

B2 - Flammable liquid



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0

Fire = 4

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

75-37-6 1,1-difluoroethane

· **Identification number(s)**

· **EC number:** 200-866-1

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:** Generally the product does not irritate the skin.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect from heat.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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Trade name: **DUST-OFF FGSA MODEL**

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- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
  
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

<b>Form:</b>	Compressed gas
<b>Color:</b>	Clear
<b>Odor:</b>	Ether-like
<b>Odour threshold:</b>	Not determined.
- **pH-value:** Not determined.
- **Change in condition**

<b>Melting point/Melting range:</b>	-117 °C
<b>Boiling point/Boiling range:</b>	-26.5 °C
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not flammable.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
- **Explosion limits:**

<b>Lower:</b>	4.9 Vol %
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<b>Upper:</b>	20.2 Vol %
· <b>Vapor pressure at 20 °C:</b>	5100 hPa
· <b>Density at 20 °C:</b>	2.4 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water at 20 °C:</b>	5 g/l
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>Organic solvents:</b>	0.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

### · Information on toxicological effects

#### · Acute toxicity:

#### · LD/LC50 values that are relevant for classification:

75-37-6 1,1-difluoroethane

Inhalative LC50/4 h 977 mg/l (mouse)

#### · Primary irritant effect:

· **on the skin:** No irritant effect.· **on the eye:** No irritating effect.· **Sensitization:** No sensitizing effects known.

#### · Additional toxicological information:

#### · Carcinogenic categories

#### · IARC (International Agency for Research on Cancer)

Substance is not listed.

#### · NTP (National Toxicology Program)

Substance is not listed.

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- **OSHA-Ca (Occupational Safety Health Administration)**
- Substance is not listed.


## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |   |   |
|---|---|
| · <b>UN-Number</b>  |   |
| · <b>DOT, TDG, IMDG, IATA</b>   | UN1030                                      |
| · <b>UN proper shipping name</b>  |   |
| · <b>DOT</b>  | 1,1-Difluoroethane                          |
| · <b>TDG</b>  | 1030 1,1-Difluoroethane                     |
| · <b>IMDG, IATA</b>   | 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A) |
| · <b>Transport hazard class(es)</b>   |   |
| · <b>DOT</b>  |   |
|  |   |
| · <b>Class</b>  | 2 Gases                                     |
| · <b>Label</b>  | 2.1   |

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· **TDG (Transport dangerous goods):**

· **Class** 2 2F Gases  
 · **Label** 2.1

· **IMDG**

· **Class** 2.1  
 · **Label** 2.1

· **IATA**

· **Class** 2 Gases  
 · **Label** 2.1

· **Packing group**  
 · **DOT, TDG, IMDG, IATA** Void

· **Environmental hazards:**  
 · **Marine pollutant:** No

· **Special precautions for user** Warning: Gases  
 · **Danger code (Kemler):** 23  
 · **EMS Number:** F-D,S-U

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**

· **DOT**  
 · **Quantity limitations** On passenger aircraft/rail: Forbidden  
 On cargo aircraft only: 150 kg

· **TDG**  
 · **Excepted quantities (EQ)** Code: E0  
 Not permitted as Excepted Quantity

· **IMDG**  
 · **Limited quantities (LQ)** 0  
 · **Excepted quantities (EQ)** Code: E0  
 Not permitted as Excepted Quantity

· **UN "Model Regulation":** UN1030, 1,1-Difluoroethane, 2.1

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## 15 Regulatory information

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

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is not listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Extremely flammable

· **Risk phrases:**

Extremely flammable.

Risk of explosion if heated under confinement.

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**· Safety phrases:***Keep in a cool place.**Keep away from heat.**Keep away from sources of ignition - No smoking.**This material and its container must be disposed of as hazardous waste.***· Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.***16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**· Date of preparation / last revision** 11/25/2015 / -**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Press. Gas: Gases under pressure: Liquefied gas

Flam. Liq. 1: Flammable liquids, Hazard Category 1

CA

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 25.11.2015

Revision: 25.11.2015

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** DUST-OFF FGSA MODEL
- **Article number:** 70705, 70706, 70707
- **CAS Number:**  
75-37-6
- **EC number:**  
200-866-1
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapour.

Press. Gas L H280 Contains gas under pressure; may explode if heated.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**  
H280 Contains gas under pressure; may explode if heated.  
H224 Extremely flammable liquid and vapour.
- **Precautionary statements**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.

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**Trade name: DUST-OFF FGSA MODEL**

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- P280** Wear protective gloves/protective clothing/eye protection/face protection.  
**P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
**P410** Protect from sunlight.  
**P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
75-37-6 1,1-difluoroethane
- **Identification number(s)**
- **EC number:** 200-866-1

## SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**  
Prevent seepage into sewage system, workpits and cellars.  
Dilute with plenty of water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Open and handle receptacle with care.
- **Information about fire - and explosion protection:**
  - Keep ignition sources away - Do not smoke.
  - Protect from heat.
  - Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
  - Keep container tightly sealed.
  - Do not seal receptacle gas tight.
  - Store in cool, dry conditions in well sealed receptacles.
  - Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.
- **Protection of hands:**
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

GB

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### SECTION 9: Physical and chemical properties

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

##### · General Information

##### · Appearance:

Form: Compressed gas

Colour: Clear

· Odour: Ether-like

· Odour threshold: Not determined.

· pH-value: Not determined.

##### · Change in condition

Melting point/Melting range: -117 °C

Boiling point/Boiling range: -26.5 °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

##### · Ignition temperature:

Decomposition temperature: Not determined.

· Self-igniting: Not determined.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

##### · Explosion limits:

Lower: 4.9 Vol %

Upper: 20.2 Vol %

· Vapour pressure at 20 °C: 5100 hPa

· Density at 20 °C: 2.4 g/cm<sup>3</sup>

· Relative density: Not determined.

· Vapour density: Not determined.

· Evaporation rate: Not determined.

##### · Solubility in / Miscibility with

water at 20 °C: 5 g/l

· Partition coefficient (n-octanol/water): Not determined.

##### · Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

##### · Solvent content:

Organic solvents: 0.0 %

VOC (EC) 100.00 %

· 9.2 Other information: No further relevant information available.

### SECTION 10: Stability and reactivity

#### · 10.1 Reactivity

#### · 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: No dangerous reactions known.

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- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**

- **LD/LC50 values relevant for classification:**

75-37-6 1,1-difluoroethane

Inhalative	LC50/4 h	977 mg/l (mouse)
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- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, IMDG, IATA** UN1030
- **14.2 UN proper shipping name**
- **ADR** 1030 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)
- **IMDG, IATA** 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)

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· **14.3 Transport hazard class(es)**· **ADR**

· **Class** 2 2F Gases.  
· **Label** 2.1

· **IMDG**

· **Class** 2.1  
· **Label** 2.1

· **IATA**

· **Class** 2 Gases.  
· **Label** 2.1

· **14.4 Packing group**

· **ADR, IMDG, IATA** Void

· **14.5 Environmental hazards:**

· **Marine pollutant:** No

· **14.6 Special precautions for user**

· **Danger code (Kemler):** Warning: Gases.  
23  
· **EMS Number:** F-D,S-U

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **ADR**

· **Limited quantities (LQ)** 0  
· **Excepted quantities (EQ)** Code: E0  
Not permitted as Excepted Quantity  
· **Transport category** 2  
· **Tunnel restriction code** B/D

· **IMDG**

· **Limited quantities (LQ)** 0  
· **Excepted quantities (EQ)** Code: E0  
Not permitted as Excepted Quantity

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· UN "Model Regulation":	UN1030, 1,1-DIFLUOROETHANE (REFRIGERANT GAS R152A), 2.1
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### **SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

### **SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Press. Gas L: Gases under pressure: Liquefied gas

Flam. Liq. 1: Flammable liquids, Hazard Category 1

GB

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## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **1.1 Productidentificatie**
- **Handelsnaam:** DUST-OFF FGSA MODEL
- **Artikelnummer:** 70705, 70706, 70707
- **CAS-nummer:**  
75-37-6
- **EC-nummer:**  
200-866-1
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**  
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- 
- Aurion  
Binnenhaven 5  
6709 PD Wageningen  
The Netherlands  
Tel: 31 317 415094  
Fax: 31 317 415955  
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS02 vlam

Flam. Liq. 1 H224 Zeer licht ontvlambare vloeistof en damp.

Press. Gas L H280 Bevat gas onder druk; kan ontploffen bij verwarming.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**  
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS02

- **Signaalwoord** Gevaar

(Vervolg op blz. 2)

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- **Gevarenaanduidingen**

H280 Bevat gas onder druk; kan ontploffen bij verwarming.

H224 Zeer licht ontvlambare vloeistof en damp.

- **Veiligheidsaanbevelingen**

P210 Verwijderd houden van warmte, hete oppervlakken, vonken, open vuur en andere ontstekingsbronnen. Niet roken.

P241 Explosieveilige elektrische/ventilatie-/verlichtings- apparatuur gebruiken.

P280 Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen.

P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen/afdouchen.

P410 Tegen zonlicht beschermen.

P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

- **2.3 Andere gevaren**

- **Resultaten van PBT- en zPzB-beoordeling**

- **PBT:** Niet bruikbaar.

- **zPzB:** Niet bruikbaar.

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**

- **CAS-Nr. omschrijving**

75-37-6 1,1-difluorethaan

- **Identificatienummer(s)**

- **EC-nummer:** 200-866-1

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**

- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.

- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid

- **Na oogcontact:** Ogen bij geopend ooglid meerdere minuten met stromend water spoelen

- **Na inslikken:** Als de klachten niet minderen, een arts raadplegen

- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.

- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**

Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**

- **Geschikte blusmiddelen:**

CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.

- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**

Geen verdere relevante informatie verkrijgbaar.

- **5.3 Advies voor brandweerlieden**

- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

NL

(Vervolg op blz. 3)

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### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures**  
Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
- **6.2 Milieuvoorzorgsmaatregelen:**  
Doordringen tot in afvalwater, riolering, putten of kelders verhinderen.  
Met veel water verdunnen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.  
Voor voldoende ventilatie zorgen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
Informatie inzake berging - zie hoofdstuk 13.

### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Tanks voorzichtig openen en behandelen.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**  
Onststekingsbronnen op afstand houden - niet roken.  
Beschermen tegen hitte.  
Maatregelen treffen tegen ontlading van statische elektriciteit.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Op een koele plaats bewaren.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:**  
Tanks ondoordringbaar gesloten houden.  
Tanks niet gasdicht afsluiten.  
Koel en droog bewaren in goed gesloten vaten.  
Tegen hitte en directe zonnestralen beschermen.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** Vervalt.
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
Vóór de pauze en aan het einde van werktijd handen wassen.
- **Ademhalingsbescherming:** Bij onvoldoende ventilatie ademhalingsbescherming.
- **Handbescherming:**  
Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

(Vervolg op blz. 4)

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- **Handschoenmateriaal**

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.

- **Doordringingstijd van het handschoenmateriaal**

De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

- **Oogbescherming:**



Nauw aansluitende veiligheidsbril

## RUBRIEK 9: Fysische en chemische eigenschappen

- **9.1 Informatie over fysische en chemische basiseigenschappen**

- **Algemene gegevens**

- **Voorkomen:**

**Vorm:** Gecomprimeerd gas

**Kleur:** Helder

- **Reuk:** Etherachtig

- **Geurdrempelwaarde:** Niet bepaald.

- **pH-waarde:** Niet bepaald.

- **Toestandsverandering**

**Smeltpunt/smeltbereik:** -117 °C

**Kookpunt/kookpuntbereik:** -26,5 °C

- **Vlampunt:** Niet bruikbaar.

- **Ontvlambaarheid (vast, gasvormig):** Niet bruikbaar.

- **Ontstekingstemperatuur:**

**Ontbindingstemperatuur:** Niet bepaald.

- **Zelfonsteking:** Niet bepaald.

- **Ontploffingsgevaar:** Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.

- **Ontploffingsgrenzen:**

**Onderste:** 4,9 Vol %

**Bovenste:** 20,2 Vol %

- **Dampspanning bij 20 °C:** 5100 hPa

- **Dichtheid bij 20 °C:** 2,4 g/cm<sup>3</sup>

- **Relatieve dichtheid** Niet bepaald.

- **Dampdichtheid** Niet bepaald.

- **Verdampingssnelheid** Niet bepaald.

- **Oplosbaarheid in/mengbaarheid met**

**Water bij 20 °C:** 5 g/l

- **Verdelingscoëfficiënt (n-octanol/water):** Niet bepaald.

- **Viscositeit**

**Dynamisch:** Niet bepaald.

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<b>Kinematisch:</b>	Niet bepaald.
<b>Oplosmiddelgehalte:</b>	
Organisch oplosmiddel:	0,0 %
VOC (EG)	100,00 %
<b>9.2 Overige informatie</b>	Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit**
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** Geen afbraak bij gebruik volgens voorschrift.
- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**

<b>Indelingsrelevantie LD/LC50-waarden:</b>		
75-37-6 1,1-difluorethaan		
Inhalatief	LC50/4 h	977 mg/l (mouse)

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Geen prikkelend effect.
- **Ernstig oogletsel/oogirritatie** Geen prikkelend effect.
- **Sensibilisatie van de luchtwegen/de huid** Geen effect van overgevoeligheid bekend.

### RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**  
Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.  
Over het algemeen geen gevaar voor water
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.

(Vervolg op blz. 6)

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- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.
- **Aanbevolen reinigingsmiddel:** Water, eventueel met toevoeging van reinigingsmiddelen.

## RUBRIEK 14: Informatie met betrekking tot het vervoer

- |   |   |
|---|---|
| <b>· 14.1 VN-nummer</b>   |   |
| <b>· ADR, IMDG, IATA</b>  | UN1030                                      |
| <b>· 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN</b>            |   |
| <b>· ADR</b>  | 1030 1,1-DIFLUORETHAAN (KOELGAS R 152A)     |
| <b>· IMDG, IATA</b>   | 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A) |
| <b>· 14.3 Transportgevaarklasse(n)</b>  |   |
| <b>· ADR</b>  |   |
|        |   |
| <b>· klasse</b>   | 2 2F Gassen                                 |
| <b>· Etiket</b>   | 2.1   |
| <b>· IMDG</b>   |   |
|      |   |
| <b>· Class</b>  | 2.1   |
| <b>· Label</b>  | 2.1   |
| <b>· IATA</b>   |   |
|      |   |
| <b>· Class</b>  | 2 Gassen                                    |
| <b>· Label</b>  | 2.1   |
| <b>· 14.4 Verpakkingsgroep:</b>   |   |
| <b>· ADR, IMDG, IATA</b>  | Niet van toepassing                         |
| <b>· 14.5 Milieugevaren:</b>  |   |
| <b>· Marine pollutant:</b>  | Neen  |
| <b>· 14.6 Bijzondere voorzorgen voor de gebruiker</b>                                   | Waarschuwing: Gassen                        |
| <b>· Kemler-getal:</b>  | 23  |
| <b>· EMS-nummer:</b>  | F-D,S-U                                     |
| <b>· 14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code</b> | Niet bruikbaar.                             |

(Vervolg op blz. 7)

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· **Transport/verdere gegevens:**

· **ADR**

· **Beperkte hoeveelheden (LQ)**

0

· **Uitgezonderde hoeveelheden (EQ)**

Code: E0

Niet toegestaan als vrijgestelde hoeveelheid

· **Vervoerscategorie**

2

· **Tunnelbeperkingscode**

B/D

· **IMDG**

· **Limited quantities (LQ)**

0

· **Excepted quantities (EQ)**

Code: E0

Not permitted as Excepted Quantity

· **VN "Model Regulation":**

UN1030, 1,1-DIFLUORETHAAN (KOELGAS R 152A), 2.1

## RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

· **SZW-lijst van kankerverwekkende stoffen**

De stof is niet aanwezig.

· **SZW-lijst van mutagene stoffen**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Nationale voorschriften:**

· **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

## RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Afkortingen en acroniemen:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

(Vervolg op blz. 8)



**Veiligheidsinformatieblad**  
volgens 1907/2006/EG, Artikel 31

datum van de druk: 25.11.2015

Herziening van: 25.11.2015

**Handelsnaam: DUST-OFF FGSA MODEL**

*Press. Gas L: Gases under pressure: Liquefied gas*  
*Flam. Liq. 1: Flammable liquids, Hazard Category 1*

(Vervolg van blz. 7)

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 25.11.2015

Révision: 25.11.2015

### SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** DUST-OFF FGSA MODEL
- **Code du produit:** 70705, 70706, 70707
- **No CAS:**  
75-37-6
- **Numéro CE:**  
200-866-1
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
*Pas d'autres informations importantes disponibles.*
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

*Flam. Liq. 1 H224 Liquide et vapeurs extrêmement inflammables.*

*Press. Gas L H280 Contient un gaz sous pression; peut exploser sous l'effet de la chaleur.*

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02

- **Mention d'avertissement** Danger
- **Mentions de danger**  
H280 Contient un gaz sous pression; peut exploser sous l'effet de la chaleur.  
H224 Liquide et vapeurs extrêmement inflammables.
- **Conseils de prudence**  
P210 Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'inflammation. Ne pas fumer.  
P241 Utiliser du matériel électrique/de ventilation/d'éclairage/antidéflagrant.

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**Nom du produit: DUST-OFF FGSA MODEL**

(suite de la page 1)

- P280 Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.
- P303+P361+P353 **EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux):** Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau/Se doucher.
- P410 Protéger du rayonnement solaire.
- P501 Éliminer le contenu/réceptif conformément à la réglementation locale/régionale/nationale/internationale.
- **2.3 Autres dangers**
  - **Résultats des évaluations PBT et vPvB**
  - **PBT:** Non applicable.
  - **vPvB:** Non applicable.

### SECTION 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
75-37-6 1,1-difluoroéthane
- **Code(s) d'identification**
- **Numéro CE:** 200-866-1

### SECTION 4: Premiers secours

- **4.1 Description des premiers secours**
- **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.
- **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.
- **Après contact avec les yeux:**  
Rincer les yeux, sous l'eau courante, pendant plusieurs minutes, en écartant bien les paupières.
- **Après ingestion:** Si les troubles persistent, consulter un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### SECTION 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**  
CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

### SECTION 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**  
Porter un équipement de sécurité. Eloigner les personnes non protégées.
- **6.2 Précautions pour la protection de l'environnement:**  
Eviter de rejeter à l'égout, les fosses et les caves.  
Diluer avec beaucoup d'eau.

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(suite de la page 2)

- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).  
Assurer une aération suffisante.
- **6.4 Référence à d'autres sections**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.  
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### SECTION 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Ouvrir et manipuler les récipients avec précaution.
- **Préventions des incendies et des explosions:**  
Tenir à l'abri des sources d'inflammation - ne pas fumer.  
Tenir à l'abri de la chaleur.  
Prendre des mesures contre les charges électrostatiques.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:**  
Tenir les emballages hermétiquement fermés.  
Ne pas fermer les emballages de telle sorte qu'ils soient hermétiques aux gaz.  
Stocker au frais et au sec dans des fûts bien fermés.  
Protéger de la forte chaleur et du rayonnement direct du soleil.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### SECTION 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.
- **8.1 Paramètres de contrôle**
- **Composants présentant des valeurs-seuil à surveiller par poste de travail:** Néant
- **Remarques supplémentaires:**  
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Équipement de protection individuel:**
- **Mesures générales de protection et d'hygiène:** Se laver les mains avant les pauses et en fin de travail.
- **Protection respiratoire:** Utiliser un appareil de protection respiratoire si la ventilation est insuffisante.
- **Protection des mains:**  
Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.  
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.  
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**  
Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
- **Temps de pénétration du matériau des gants**  
Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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# Fiche de données de sécurité

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· **Protection des yeux:**

Lunettes de protection hermétiques

### SECTION 9: Propriétés physiques et chimiques

· **9.1 Informations sur les propriétés physiques et chimiques essentielles**· **Indications générales**· **Aspect:**

<b>Forme:</b>	Gaz comprimé
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<b>Couleur:</b>	Transparent
-----------------	-------------

<b>Odeur:</b>	Genre éther
---------------	-------------

<b>Seuil olfactif:</b>	Non déterminé.
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<b>valeur du pH:</b>	Non déterminé.
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· **Changement d'état**

<b>Point de fusion:</b>	-117 °C
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<b>Point d'ébullition:</b>	-26,5 °C
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<b>Point d'éclair</b>	Non applicable.
-----------------------	-----------------

<b>Inflammabilité (solide, gazeux):</b>	Non applicable.
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· **Température d'inflammation:**

<b>Température de décomposition:</b>	Non déterminé.
--------------------------------------	----------------

<b>Auto-inflammation:</b>	Non déterminé.
---------------------------	----------------

<b>Danger d'explosion:</b>	Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.
----------------------------	--

· **Limites d'explosion:**

<b>Inférieure:</b>	4,9 Vol %
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<b>Supérieure:</b>	20,2 Vol %
--------------------	------------

<b>Pression de vapeur à 20 °C:</b>	5100 hPa
------------------------------------	----------

<b>Densité à 20 °C:</b>	2,4 g/cm <sup>3</sup>
-------------------------	-----------------------

<b>Densité relative</b>	Non déterminé.
-------------------------	----------------

<b>Densité de vapeur.</b>	Non déterminé.
---------------------------	----------------

<b>Vitesse d'évaporation</b>	Non déterminé.
------------------------------	----------------

· **Solubilité dans/miscibilité avec**

<b>l'eau à 20 °C:</b>	5 g/l
-----------------------	-------

<b>Coefficient de partage (n-octanol/eau):</b>	Non déterminé.
--	----------------

· **Viscosité:**

<b>Dynamique:</b>	Non déterminé.
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<b>Cinématique:</b>	Non déterminé.
---------------------	----------------

· **Teneur en solvants:**

<b>Solvants organiques:</b>	0,0 %
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<b>VOC (CE)</b>	100,00 %
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# Fiche de données de sécurité

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· **9.2 Autres informations** Pas d'autres informations importantes disponibles.

### SECTION 10: Stabilité et réactivité

- **10.1 Réactivité**
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

### SECTION 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
  - **Toxicité aiguë**
- |  |                            |
|--|----------------------------|
| · <b>Valeurs LD/LC50 déterminantes pour la classification:</b> |                            |
| 75-37-6 1,1-difluoroéthane                                     |                            |
| Inhalatoire  | LC50/4 h 977 mg/l (souris) |
- **Effet primaire d'irritation:**
  - **Corrosion cutanée/irritation cutanée** Pas d'effet d'irritation.
  - **Lésions oculaires graves/irritation oculaire** Pas d'effet d'irritation.
  - **Sensibilisation respiratoire ou cutanée** Aucun effet de sensibilisation connu.

### SECTION 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:** En général non polluant
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### SECTION 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.
- **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

FR

(suite page 6)

**Fiche de données de sécurité**  
selon 1907/2006/CE, Article 31




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(suite de la page 5)

### SECTION 14: Informations relatives au transport

· 14.1 No ONU · ADR, IMDG, IATA	UN1030
· 14.2 Nom d'expédition des Nations unies · ADR · IMDG, IATA	1030 DIFLUORO-1,1 ÉTHANE (GAZ RÉFRIGÉRANT R 152a) 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)
· 14.3 Classe(s) de danger pour le transport · ADR	
	
· Classe · Étiquette	2 2F Gaz. 2.1
· IMDG	
	
· Class · Label	2.1 2.1
· IATA	
	
· Class · Label	2 Gaz. 2.1
· 14.4 Groupe d'emballage · ADR, IMDG, IATA	néant
· 14.5 Dangers pour l'environnement: · Marine Polluant:	Non
· 14.6 Précautions particulières à prendre par l'utilisateur · Indice Kemler: · No EMS:	Attention: Gaz. 23 F-D,S-U
· 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC	Non applicable.
· Indications complémentaires de transport:	
· ADR · Quantités limitées (LQ) · Quantités exceptées (EQ) · Catégorie de transport	0 Code: E0 Non autorisé en tant que quantité exceptée 2

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· <b>Code de restriction en tunnels</b>	B/D
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>"Règlement type" de l'ONU:</b>	UN1030, DIFLUORO-1,1 ÉTHANE (GAZ RÉFRIGÉRANT R 152a), 2.1

### SECTION 15: Informations réglementaires

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

### SECTION 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

- **Acronymes et abréviations:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 Press. Gas L: Gases under pressure: Liquefied gas  
 Flam. Liq. 1: Flammable liquids, Hazard Category 1



# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

Druckdatum: 25.11.2015

überarbeitet am: 25.11.2015

### ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname:** DUST-OFF FGSA MODEL
- **Artikelnummer:** 70705, 70706, 70707
- **CAS-Nummer:**  
75-37-6
- **EG-Nummer:**  
200-866-1
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**  
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany  
Tel: +49(0)89 18 93 668-0  
safety@scienceservices.de
- 24h Giftnotruf Munchen: +49 (0)89 19240  
Toxikologische Abteilung der II. Medizinischen Klinik  
rechts der Isar, Munchen. - www.toxinfo.org
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 1 H224 Flüssigkeit und Dampf extrem entzündbar.

Press. Gas L H280 Enthält Gas unter Druck; kann bei Erwärmung explodieren.

- **2.2 Kennzeichnungselemente**
- **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**  
Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

(Fortsetzung auf Seite 2)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

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**Handelsname: DUST-OFF FGSA MODEL**

(Fortsetzung von Seite 1)

**· Gefahrenpiktogramme**


GHS02

**· Signalwort Gefahr**
**· Gefahrenhinweise**
*H280 Enthält Gas unter Druck; kann bei Erwärmung explodieren.*
*H224 Flüssigkeit und Dampf extrem entzündbar.*
**· Sicherheitshinweise**
*P210 Von Hitze, heißen Oberflächen, Funken, offenen Flammen und anderen Zündquellen fernhalten. Nicht rauchen.*
*P241 Explosionsgeschützte elektrische Geräte/Lüftungsanlagen/Beleuchtungsanlagen verwenden.*
*P280 Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen.*
*P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen/duschen.*
*P410 Vor Sonnenbestrahlung schützen.*
*P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.*
**· 2.3 Sonstige Gefahren**
**· Ergebnisse der PBT- und vPvB-Beurteilung**
**· PBT:** Nicht anwendbar.

**· vPvB:** Nicht anwendbar.

### ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

**· 3.1 Chemische Charakterisierung: Stoffe**
**· CAS-Nr. Bezeichnung**
*75-37-6 Ethylenfluorid*
**· Identifikationsnummer(n)**
**· EG-Nummer:** 200-866-1

### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

**· 4.1 Beschreibung der Erste-Hilfe-Maßnahmen**
**· Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.

**· Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.

**· Nach Augenkontakt:** Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.

**· Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.

**· 4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**
*Keine weiteren relevanten Informationen verfügbar.*
**· 4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**
*Keine weiteren relevanten Informationen verfügbar.*

DE

(Fortsetzung auf Seite 3)

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

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**Handelsname: DUST-OFF FGSA MODEL**

(Fortsetzung von Seite 2)

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**  
CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**  
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**  
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
- **6.2 Umweltschutzmaßnahmen:**  
Eindringen in Kanalisation, Gruben und Keller verhindern.  
Mit viel Wasser verdünnen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**  
Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.  
Für ausreichende Lüftung sorgen.
- **6.4 Verweis auf andere Abschnitte**  
Informationen zur sicheren Handhabung siehe Abschnitt 7.  
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.  
Informationen zur Entsorgung siehe Abschnitt 13.

### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung** Behälter mit Vorsicht öffnen und handhaben.
- **Hinweise zum Brand- und Explosionsschutz:**  
Zündquellen fernhalten - nicht rauchen.  
Vor Hitze schützen.  
Maßnahmen gegen elektrostatische Aufladung treffen.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** An einem kühlen Ort lagern.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**  
Behälter dicht geschlossen halten.  
Behälter nicht gasdicht verschließen.  
In gut verschlossenen Gebinden kühl und trocken lagern.  
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Hochentzündlich
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

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- **8.1 Zu überwachende Parameter**
- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:** Entfällt.
- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
  
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:** Vor den Pausen und bei Arbeitsende Hände waschen.
- **Atemschutz:** Bei unzureichender Belüftung Atemschutz.
- **Handschutz:**  
Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.  
Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.
- **Handschuhmaterial**  
Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.
- **Durchdringungszeit des Handschuhmaterials**  
Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.
- **Augenschutz:**



Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

- **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**
- **Allgemeine Angaben**
- **Aussehen:**

<b>Form:</b>	Komprimiertes Gas
<b>Farbe:</b>	Klar
<b>Geruch:</b>	Etherartig
<b>Geruchsschwelle:</b>	Nicht bestimmt.
- **pH-Wert:** Nicht bestimmt.
- **Zustandsänderung**

<b>Schmelzpunkt/Schmelzbereich:</b>	-117 °C
<b>Siedepunkt/Siedebereich:</b>	-26,5 °C
- **Flammpunkt:** Nicht anwendbar.
- **Entzündlichkeit (fest, gasförmig):** Nicht anwendbar.
- **Zündtemperatur:**
- **Zersetzungstemperatur:** Nicht bestimmt.
- **Selbstentzündlichkeit:** Nicht bestimmt.
- **Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.
- **Explosionsgrenzen:**

<b>Untere:</b>	4,9 Vol %
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<b>Obere:</b>	20,2 Vol %
· <b>Dampfdruck bei 20 °C:</b>	5100 hPa
· <b>Dichte bei 20 °C:</b>	2,4 g/cm <sup>3</sup>
· <b>Relative Dichte</b>	Nicht bestimmt.
· <b>Dampfdichte</b>	Nicht bestimmt.
· <b>Verdampfungsgeschwindigkeit</b>	Nicht bestimmt.
· <b>Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C:</b>	5 g/l
· <b>Verteilungskoeffizient (n-Octanol/Wasser):</b>	Nicht bestimmt.
· <b>Viskosität:</b>	
<b>Dynamisch:</b>	Nicht bestimmt.
<b>Kinematisch:</b>	Nicht bestimmt.
· <b>Lösemittelgehalt:</b>	
<b>Organische Lösemittel:</b>	0,0 %
<b>VOC (EU)</b>	100,00 %
· <b>9.2 Sonstige Angaben</b>	Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität**
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**

· <b>Einstufungsrelevante LD/LC50-Werte:</b>		
75-37-6 Ethylenfluorid		
Inhalativ	LC50/4 h	977 mg/l (mouse)

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Keine Reizwirkung.
- **Schwere Augenschädigung/-reizung** Keine Reizwirkung.
- **Sensibilisierung der Atemwege/Haut** Keine sensibilisierende Wirkung bekannt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.

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- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:** Im allgemeinen nicht wassergefährdend
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.
- **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

### ABSCHNITT 14: Angaben zum Transport

<b>14.1 UN-Nummer</b>	UN1030
<b>ADR, IMDG, IATA</b>	
<b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b>	
<b>ADR</b>	1030 1,1-DIFLUORETHAN (GAS ALS KÄLTEMITTEL R 152 A)
<b>IMDG, IATA</b>	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)
<b>14.3 Transportgefahrenklassen</b>	
<b>ADR</b>	
	
<b>Klasse</b>	2 2F Gase
<b>Gefahrzettel</b>	2.1
<b>IMDG</b>	
	
<b>Class</b>	2.1
<b>Label</b>	2.1
<b>IATA</b>	
	
<b>Class</b>	2 Gase
<b>Label</b>	2.1

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· <b>14.4 Verpackungsgruppe</b> · <b>ADR, IMDG, IATA</b>	entfällt
· <b>14.5 Umweltgefahren:</b> · <b>Marine pollutant:</b>	Nein
· <b>14.6 Besondere Vorsichtsmaßnahmen für den Verwender</b> · <b>Kemler-Zahl:</b> · <b>EMS-Nummer:</b>	Achtung: Gase 23 F-D,S-U
· <b>14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code</b>	Nicht anwendbar.
· <b>Transport/weitere Angaben:</b>	
· <b>ADR</b> · <b>Begrenzte Menge (LQ)</b> · <b>Freigestellte Mengen (EQ)</b>	0 Code: E0 In freigestellten Mengen nicht zugelassen
· <b>Beförderungskategorie</b> · <b>Tunnelbeschränkungscode</b>	2 B/D
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	0 Code: E0 Not permitted as Excepted Quantity
· <b>UN "Model Regulation":</b>	UN1030, 1,1-DIFLUORETHAN (GAS ALS KÄLTEMITTEL R 152 A), 2.1

### ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Richtlinie 2012/18/EU**
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
- **Nationale Vorschriften:**
- **Wassergefährdungsklasse:** Im allgemeinen nicht wassergefährdend.
- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
VOC: Volatile Organic Compounds (USA, EU)

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**Handelsname: DUST-OFF FGSA MODEL***LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**Press. Gas L: Gases under pressure: Liquefied gas**Flam. Liq. 1: Flammable liquids, Hazard Category 1*

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DE



**Scheda di dati di sicurezza**  
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### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** DUST-OFF FGSA MODEL

· **Articolo numero:** 70705, 70706, 70707

· **Numero CAS:**

75-37-6

· **Numeri CE:**

200-866-1

· **1.2 Usi pertinenti identificati della sostanza o miscela e usi sconsigliati** Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 1 H224 Liquido e vapori altamente infiammabili.

Press. Gas L H280 Contiene gas sotto pressione; può esplodere se riscaldato.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS02

· **Avvertenza Pericolo**

· **Indicazioni di pericolo**

H280 Contiene gas sotto pressione; può esplodere se riscaldato.

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H224 Liquido e vapori altamente infiammabili.

**Consigli di prudenza**

- P210 Tenere lontano da fonti di calore, superfici riscaldate, scintille, fiamme e altre fonti di innesco. Vietato fumare.
- P241 Utilizzare impianti elettrici/di ventilazione/d'illuminazione/a prova di esplosione.
- P280 Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.
- P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/fare una doccia.
- P410 Proteggere dai raggi solari.
- P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

**2.3 Altri pericoli**

**Risultati della valutazione PBT e vPvB**

- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.

### SEZIONE 3: Composizione/informazioni sugli ingredienti

**3.1 Caratteristiche chimiche: Sostanze**

- **Numero CAS**  
75-37-6 1,1-difluoroetano
- **Numerali di identificazione**
- **Numerali CE:** 200-866-1

### SEZIONE 4: Misure di primo soccorso

- **4.1 Descrizione delle misure di primo soccorso**
- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
- **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.
- **Contatto con gli occhi:** Lavare con acqua corrente per alcuni minuti tenendo le palpebre ben aperte.
- **Ingestione:** Se il dolore persiste consultare il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione della eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**  
Non sono disponibili altre informazioni.

### SEZIONE 5: Misure antincendio

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**  
CO2, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

### SEZIONE 6: Misure in caso di rilascio accidentale

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**  
Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.
- **6.2 Precauzioni ambientali:**  
Impedire l'entrata del prodotto nelle fognature, cave o cantine.

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*Diluire abbondantemente con acqua.*

· **6.3 Metodi e materiali per il contenimento e per la bonifica:**

*Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).*

*Provvedere ad una sufficiente areazione.*

· **6.4 Riferimento ad altre sezioni**

*Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.*

*Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.*

*Per informazioni relative allo smaltimento vedere Capitolo 13.*

### **SEZIONE 7: Manipolazione e immagazzinamento**

· **7.1 Precauzioni per la manipolazione sicura** *Aprire e manipolare i recipienti con cautela.*

· **Indicazioni in caso di incendio ed esplosione:**

*Tenere lontano da fonti di calore, non fumare.*

*Proteggere dal calore.*

*Adottare provvedimenti contro cariche elettrostatiche.*

· **7.2 Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità**

· **Stoccaggio:**

· **Requisiti dei magazzini e dei recipienti:** *Conservare in ambiente fresco.*

· **Indicazioni sullo stoccaggio misto:** *Non necessario.*

· **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**

*Mantenere i recipienti ermeticamente chiusi.*

*Chiudere i recipienti non a tenuta di gas.*

*Conservare in luogo fresco e asciutto in fusti ben chiusi.*

*Proteggere dal calore e dai raggi diretti del sole.*

· **7.3 Usi finali specifici** *Non sono disponibili altre informazioni.*

### **SEZIONE 8: Controllo dell'esposizione/protezione individuale**

· **Ulteriori indicazioni sulla struttura di impianti tecnici:** *Nessun dato ulteriore, vedere punto 7.*

· **8.1 Parametri di controllo**

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:** *Non Necessario.*

· **Ulteriori indicazioni:** *Le liste valide alla data di compilazione sono state usate come base.*

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **Norme generali protettive e di igiene del lavoro:** *Lavarsi le mani prima dell'intervallo o a lavoro terminato.*

· **Maschera protettiva:** *In ambienti non sufficientemente ventilati utilizzare la maschera protettiva.*

· **Guanti protettivi:**

*Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.*

*A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.*

*Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.*

· **Materiale dei guanti**

*La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.*

· **Tempo di permeazione del materiale dei guanti**

*Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.*

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· Occhiali protettivi:



Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

#### · 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

##### · Indicazioni generali

##### · Aspetto:

Forma: Gas compresso

Colore: Chiaro

· Odore: Simile all'etere

· Soglia olfattiva: Non definito.

· valori di pH: Non definito.

##### · Cambiamento di stato

Temperatura di fusione/ambito di fusione: -117 °C

Temperatura di ebollizione/ambito di ebollizione: -26,5 °C

· Punto di infiammabilità: Non applicabile.

· Infiammabilità (solido, gassoso): Non applicabile.

##### · Temperatura di accensione:

Temperatura di decomposizione: Non definito.

· Autoaccensione: Non definito.

· Pericolo di esplosione: Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.

##### · Limiti di infiammabilità:

Inferiore: 4,9 Vol %

Superiore: 20,2 Vol %

· Tensione di vapore a 20 °C: 5100 hPa

· Densità a 20 °C: 2,4 g/cm<sup>3</sup>

· Densità relativa: Non definito.

· Densità del vapore: Non definito.

· Velocità di evaporazione: Non definito.

· Solubilità in/Miscibilità con  
acqua a 20 °C: 5 g/l

· Coefficiente di distribuzione (n-Octanol/acqua): Non definito.

##### · Viscosità:

Dinamica: Non definito.

Cinematica: Non definito.

##### · Tenore del solvente:

Solventi organici: 0,0 %

VOC (CE) 100,00 %

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· 9.2 Altre informazioni

Non sono disponibili altre informazioni.

### SEZIONE 10: Stabilità e reattività

- 10.1 Reattività
- 10.2 Stabilità chimica
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- 10.3 Possibilità di reazioni pericolose Non sono note reazioni pericolose.
- 10.4 Condizioni da evitare Non sono disponibili altre informazioni.
- 10.5 Materiali incompatibili: Non sono disponibili altre informazioni.
- 10.6 Prodotti di decomposizione pericolosi: Non sono noti prodotti di decomposizione pericolosi.

### SEZIONE 11: Informazioni tossicologiche

- 11.1 Informazioni sugli effetti tossicologici
- Tossicità acuta

· **Valori LD/LC50 rilevanti per la classificazione:**

75-37-6 1,1-difluoroetano

Per inalazione LC50/4 h 977 mg/l (mouse)

- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Non ha effetti irritanti.
- **Lesioni oculari gravi/irritazioni oculari gravi** Non irritante.
- **Sensibilizzazione respiratoria o cutanea** Non si conoscono effetti sensibilizzanti.

### SEZIONE 12: Informazioni ecologiche

- 12.1 Tossicità
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- 12.2 **Persistenza e degradabilità** Non sono disponibili altre informazioni.
- 12.3 **Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- 12.4 **Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:** Generalmente non pericoloso
- 12.5 **Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- 12.6 **Altri effetti avversi** Non sono disponibili altre informazioni.

### SEZIONE 13: Considerazioni sullo smaltimento

- 13.1 **Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

IT

(continua a pagina 6)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31




Stampato il: 25.11.2015

Revisione: 25.11.2015

Denominazione commerciale: **DUST-OFF FGSA MODEL**

(Segue da pagina 5)

### SEZIONE 14: Informazioni sul trasporto

· 14.1 Numero ONU · ADR, IMDG, IATA	UN1030
· 14.2 Nome di spedizione dell'ONU · ADR · IMDG, IATA	1030 1,1-DIFLUOROETANO (GAS REFRIGERANTE R 152a) 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)
· 14.3 Classi di pericolo connesso al trasporto · ADR	
	
· Classe · Etichetta	2 2F Gas 2.1
· IMDG	
	
· Class · Label	2.1 2.1
· IATA	
	
· Class · Label	2 Gas 2.1
· 14.4 Gruppo di imballaggio · ADR, IMDG, IATA	non applicabile
· 14.5 Pericoli per l'ambiente: · Marine pollutant:	No
· 14.6 Precauzioni speciali per gli utilizzatori · Numero Kemler: · Numero EMS:	Attenzione: Gas 23 F-D,S-U
· 14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL 73/78 ed il codice IBC	Non applicabile.
· Trasporto/ulteriori indicazioni:	
· ADR · Quantità limitate (LQ) · Quantità esenti (EQ)	0 Codice: E0 Vietato al trasporto in quantità esente
· Categoria di trasporto · Codice di restrizione in galleria	2 B/D

(continua a pagina 7)

IT

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

Stampato il: 25.11.2015

Revisione: 25.11.2015

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(Segue da pagina 6)

· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>UN "Model Regulation":</b>	UN1030, 1,1-DIFLUOROETANO (GAS REFRIGERANTE R 152a), 2.1

### SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta
- **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

### SEZIONE 16: Altre informazioni

*I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.*

- **Abbreviazioni e acronimi:**  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 VOC: Volatile Organic Compounds (USA, EU)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 Press. Gas L: Gases under pressure: Liquefied gas  
 Flam. Liq. 1: Flammable liquids, Hazard Category 1

IT

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.11.25

개정: 2015.11.25

### 1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명: DUST-OFF FGSA MODEL**
- **상품번호: 70705, 70706, 70707**
- **CAS-번호**  
75-37-6
- **EC 의번호:**  
200-866-1
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
- **제품의 권고 용도와 사용상의 제한:** 실험실 화학품
- **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
- **제조사/수입자/유통업자 정보:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Samchang Commercial Co., Ltd.**  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298
- **추가적인 정보 획득 가능:** Product safety department
- **비상연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 유해성.위험성

- **순물질 또는 혼합물의 분류**



화염

인화성 액체 구분1 H224 극인화성 액체 및 증기

고압가스(액화가스) H280 고압가스 포함: 가열하면 폭발할 수 있음

- **라벨표기 요소**
- **GHS 라벨 요소**  
본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- **그림문자**



GHS02

- **신호어 위험**
- **유해.위험 문구**  
고압가스 포함: 가열하면 폭발할 수 있음  
극인화성 액체 및 증기

(2 쪽에 계속)



# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.11.25

개정: 2015.11.25

**제품명: DUST-OFF FGSA MODEL**

(1 쪽부터계속)

**· 예방조치 문구**

- 열·스파크·화염·고열로부터 멀리하시오 – 금연
- 폭발 방지용 전기·환기·조명·장비를 사용하시오.
- (보호장갑·보호의·보안경·안면보호구)를(을) 착용하시오.
- 피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 헹구시오.
- 햇빛 차단 필요.
- 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

**· 기타 유해성**

- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

**3 구성성분의 명칭 및 함유량**

- 화학적 특성: 화학물질
- CAS-번호표시  
75-37-6 1,1-difluoroethane
- 식별 번호
- EC 의번호: 200-866-1

**4 응급조치 요령**

- 응급조치요령 내용
- 흡입했을 때: 신선한 공기를 쉼, 통증이 있을 때는 의료진의 도움을 구한다.
- 피부에 접촉했을 때: 일반적으로 이제품은 피부에 자극적이지 않다.
- 눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어낸다.
- 먹었을 때: 증상이 지속될 경우에는 의사와 상담한다.
- 기타 의사의 주의사항:
- 가장 중요한 급·만성 증상 및 영향 추가적인 정보가 존재하지 않습니다.
- 즉각적인 의료처리 및 특별치료가 필요함을 시사하는 징후 추가적인 정보가 존재하지 않습니다.

**5 폭발·화재시 대처방법**

- 소화제
- 적절한 소화제:  
이산화탄소, 진화용 석회 가루 또는 물방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- 본 화학물질이나 혼합물에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.
- 소방관에 대한 권고사항
- 화재 진압 시 착용할 보호구 및 예방조치: 특별한 조치가 필요없음.

**6 누출 사고 시 대처방법**

- 개인적 예방조치, 보호장비 및 응급처치 절차 안전장비 착용하고, 무방비의 사람은 격리시킨다.
- 환경 관련 예방조치:  
하수도, 구덩이그리고 지하실로의 유입을 막는다.  
많은 물로 희석시킨다.
- 밀폐 및 정화 방법과 소재:  
액체가 혼합된 물질(모래, 규조토, 산성결합물, 일반결합물, 톱밥)에 흡입되도록 한다.  
충분한 환기가 되도록 한다.

(3 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.11.25

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**제품명: DUST-OFF FGSA MODEL**

(2 쪽부터계속)

- **타 섹션 참조**  
 안전 관리에 대한 정보는 제7 장 을 참고하시오.  
 개인 보호 장비에 대한 정보는 제8 장 을 참고하시오.  
 쓰레기 처리에 대한 정보는 제13 장 을 참고하시오.

### 7 취급 및 저장방법

- **취급:**
- **안전 취급을 위한 예방조치** 조심스럽게용기를 개봉하거나취급한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:**  
 발 화 요소는 멀 리 둔 다.금 연.  
 열로부터보호한다.  
 정 전 기 의 충 전 으로부터 보호한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 차 가운 장 소에 보관한다.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필 요없음
- **보 관 조 건 에 관 한 추 가 적 인 정 보:**  
 용기를새지않게밀폐한채보관한다.  
 요 기 를 가 스 가 새 지 않 게 밀 폐 시 킨 다.  
 밀폐된용기속에서늘 하고건조 하게보관 한다.  
 열이나직사광선으로부터보호한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

- **첨단시설 디자인에 대한 추가정보:** 더 이 상 의 자 료 는 없 음. 항 목 7 을 참 고 하 시 오.
- **통제 변수**
- **화학물질의 노출기준, 생물학적 노출기준 등:** 생략
- **추 가 정 보:** 제 조 할 당 시 에 유 효 한 목 록 을 기 초 로 사 용 했 다.
- **노출 통제**
- **개인 보호구**
- **일반적보호조치및위생조치:** 휴 식 전 이 나 작 업 이 끝 날 때 마 다 손 을 씻 는 다.
- **호흡기 보호:** 환기가 충분하지 않을 때는 호흡 보호 장비를 사용한다.
- **손 보호:**  
 장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.  
 테 슷 를 하 지 않 았 기 때 문 에 제 품 / 조 제 / 화 학 혼 합 물 에 적 합 한 장 갑 재 질 에 대 한 추 천 이 없 다.  
 투과 시간, 침 투 율 과 저 하 를 고 려 해 서 장 갑 재 료 를 선택한다.
- **장갑의재료**  
 적합한장갑의선정은재질차이뿐아니라품질기준의차이도 고려하여이루어져야하고제조업자에따라서도다  
 르게선정되어야한다.
- **장 갑 재 료 의 투 과 시 간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.
- **눈 보호:**



팍조이는보안경

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.11.25

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**제품명: DUST-OFF FGSA MODEL**

(3 쪽부터계속)

### 9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
· 물리적 상태:	압축가스
· 색:	밝은
· 냄새:	에테르종류의
· 후각역치	알맞지않다.
· pH:	알맞지않다.
· 상태변화	
· 녹는점/어는점:	-117 °C
· 초기 끓는점과 끓는점 범위:	-26.5 °C
· 인화점:	해당사항 없음.
· 인화성(고체, 기체):	해당사항 없음.
· 점화온도:	
· 분해 온도:	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.
· 인화 또는 폭발 범위의 상한/하한	
· 아래로:	4.9 Vol %
· 위로:	20.2 Vol %
· 증기압 의경우 20 °C:	5100 hPa
· 밀도 의경우 20 °C:	2.4 g/cm <sup>3</sup>
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도:	
· 물 의경우 20 °C:	5 g/l
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
· 역학성:	알맞지않다.
· 동점성:	알맞지않다.
· 용매내용물	
· 유기용매:	0.0 %
· VOC (EU)	100.00 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

### 10 안정성 및 반응성

- 반응성
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한 반응으로는알려지지않았다.

(5 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

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**제품명: DUST-OFF FGSA MODEL**

(4 쪽부터계속)

- **피해야 할 조건** 추가적인 정보가 존재하지 않습니다.
- **혼합 금지 물질:** 추가적인 정보가 존재하지 않습니다.
- **유해분해물질:** 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

- **독성학적 영향에 대한 정보**
- **급성 독성:**

· **LD/LC50-수치에 따른 분류:**

75-37-6 1,1-difluoroethane

흡입의	LC50/4 h	977 mg/l (mouse)
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- **일차적 자극 효과:**
- **피부 부식성 또는 자극성:** 무자극
- **심한 눈 손상 또는 자극성:** 무자극.
- **감각화:** 민감한영향이없는것으로알려져있다.

### 12 환경에 미치는 영향

- **독성**
- **수생독성:** 추가적인 정보가 존재하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재하지 않습니다.
- **추가적인 생태학 정보:**
- **일반 특징:** 일반적으로수 질오염이되지않는다
- **PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과**
- **PBT(잔류성, 생물농축성, 독성 물질):** 해당사항 없음.
- **vPvB(고 잔류성, 고 생물농축성 물질):** 해당사항 없음.
- **기타 부작용** 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- **폐기물 처리 방법**
- **권고:** 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장:**
- **권고:** 당국의지침에입각한쓰레기처리.
- **추천 세정제:** 경우에따라서세제가첨가된물

### 14 운송에 필요한 정보

- **유엔 번호**
- **ADR, IMDG, IATA** UN1030
- **UN 적정 선적명**
- **ADR** 1030 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)

(6 쪽에계속)

# 안전지침서




## 제31조의 1907/2006/EC에 따라

기압점: 2015.11.25

개정: 2015.11.25

**제품명: DUST-OFF FGSA MODEL**

(5 쪽부터계속)

<ul style="list-style-type: none"> <li>· IMDG, IATA</li> </ul>	<p>1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)</p>
<ul style="list-style-type: none"> <li>· 교통 위험 클래스</li> <li>· ADR</li> </ul>	
	
<ul style="list-style-type: none"> <li>· 등급</li> <li>· 위험물 라벨</li> </ul>	<p>2 2F 가스 2.1</p>
<ul style="list-style-type: none"> <li>· IMDG</li> </ul>	
	
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>2.1 2.1</p>
<ul style="list-style-type: none"> <li>· IATA</li> </ul>	
	
<ul style="list-style-type: none"> <li>· Class</li> <li>· Label</li> </ul>	<p>2 가스 2.1</p>
<ul style="list-style-type: none"> <li>· 용기등급</li> <li>· ADR, IMDG, IATA</li> </ul>	<p>누락되다</p>
<ul style="list-style-type: none"> <li>· 환경적 유해물질:</li> <li>· 해양오염물질:</li> </ul>	<p>아니오</p>
<ul style="list-style-type: none"> <li>· 이용자 특별 예방조치</li> <li>· 위험 코드:</li> <li>· EMS-번호:</li> </ul>	<p>경고: 가스 23 F-D,S-U</p>
<ul style="list-style-type: none"> <li>· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송</li> </ul>	<p>해당사항 없음.</p>
<ul style="list-style-type: none"> <li>· 운송/추가 정보:</li> </ul>	
<ul style="list-style-type: none"> <li>· ADR</li> <li>· 한정 수량 (LQ)</li> <li>· Excepted quantities (EQ)</li> <li>· 운송 구분</li> <li>· 터널 제한 코드</li> </ul>	<p>0 Code: E0 Not permitted as Excepted Quantity 2 B/D</p>
<ul style="list-style-type: none"> <li>· IMDG</li> <li>· Limited quantities (LQ)</li> <li>· Excepted quantities (EQ)</li> </ul>	<p>0 Code: E0 Not permitted as Excepted Quantity</p>

(7 쪽에계속)

# 안전지침서

## 제31조의 1907/2006/EC에 따라

기압점: 2015.11.25

개정: 2015.11.25

**제품명: DUST-OFF FGSA MODEL**

(6 쪽부터계속)

· UN "모범 규제": UN1030, 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A), 2.1

### 15 법적 규제현황

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory

75-37-6	1,1-difluoroethane	KE-10545
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· GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 위험 도표



GHS02

· 표지어 위험

· 위험 문구

고압가스 포함: 가열하면 폭발할 수 있음

극인화성 액체 및 증기

· 주의 문구

열·스파크·화염·고열로부터 멀리하시오 – 금연

폭발 방지용 전기·환기·조명·장비를 사용하시오.

(보호장갑·보호의·보안경·안면보호구)를(을) 착용하시오.

피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시오 피부를 물/샤워로 행구시오.

햇빛 차단 필요.

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

### 16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은 기술하지않았으며계약적인법률관계에기반을두고있지도않다

· 최초 작성일자: 2015.11.25

· 개정 횟수 및 최종 개정일자: 1 / 2015.11.25

· 약어와 두문자어:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

고압가스(액화가스): Gases under pressure: Liquefied gas

인화성 액체 구분1: Flammable liquids, Hazard Category 1

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 25.11.2015

Revisión: 25.11.2015

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

- **1.1 Identificador del producto**
- **Nombre comercial:** DUST-OFF FGSA MODEL
- **Número del artículo:** 70705, 70706, 70707
- **Número CAS:**  
75-37-6
- **Número CE:**  
200-866-1
- **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**  
No existen más datos relevantes disponibles.
- **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio
- **1.3 Datos del proveedor de la ficha de datos de seguridad**
- **Fabricante/distribuidor:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: sgkcck@aol.com  
www.emsdiasum.com
- **Aname**  
C/ Perez Galdos no. 2  
28693 Quijorna  
Madrid, Spain  
Tel: +34.91.816.89.50  
Fax: +34.91.816.85.94  
email: ventas@aname.es
- **Área de información:** Product safety department
- **1.4 Teléfono de emergencia:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

- **2.1 Clasificación de la sustancia o de la mezcla**
- **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Liq. 1 H224 Líquido y vapores extremadamente inflamables.

Press. Gas L H280 Contiene gas a presión; peligro de explosión en caso de calentamiento.

- **2.2 Elementos de la etiqueta**
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**  
La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.
- **Pictogramas de peligro**



GHS02

- **Palabra de advertencia** Peligro

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 25.11.2015

Revisión: 25.11.2015

**Nombre comercial: DUST-OFF FGSA MODEL**

( se continua en página 1 )

· **Indicaciones de peligro**

- H280 Contiene gas a presión; peligro de explosión en caso de calentamiento.  
H224 Líquido y vapores extremadamente inflamables.

· **Consejos de prudencia**

- P210 Mantener alejado del calor, de superficies calientes, de chispas, de llamas abiertas y de cualquier otra fuente de ignición. No fumar.  
P241 Utilizar un material eléctrico, de ventilación o de iluminación/antideflagrante.  
P280 Llevar guantes/prendas/gafas/máscara de protección.  
P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente todas las prendas contaminadas. Aclararse la piel con agua/ducharse.  
P410 Proteger de la luz del sol.  
P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· **2.3 Otros peligros**

· **Resultados de la valoración PBT y mPmB**

- **PBT:** No aplicable.  
· **mPmB:** No aplicable.

### SECCIÓN 3: Composición/información sobre los componentes

· **3.1 Caracterización química: Sustancias**

· **Denominación N° CAS**

75-37-6 1,1-difluoroetano

· **Número(s) de identificación**

· **Número CE:** 200-866-1

### SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**

- **En caso de inhalación del producto:** Suministrar aire fresco. En caso de trastornos, consultar al médico.  
· **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.  
· **En caso de con los ojos:** Limpiar los ojos abiertos durante varios minutos con agua corriente.  
· **En caso de ingestión:** Consultar un médico si los trastornos persisten.  
· **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.  
· **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente** No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

· **5.1 Medios de extinción**

· **Sustancias extintoras apropiadas:**

CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.

· **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.

· **5.3 Recomendaciones para el personal de lucha contra incendios**

· **Equipo especial de protección:** No se requieren medidas especiales.

### SECCIÓN 6: Medidas en caso de vertido accidental

· **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**

Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

( se continua en página 3 )



# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

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**Nombre comercial: DUST-OFF FGSA MODEL**

( se continua en página 2 )

- **6.2 Precauciones relativas al medio ambiente:**  
*Impedir que penetre en el alcantarillado, en fosas o en sótanos.  
Diluir con mucha agua.*
- **6.3 Métodos y material de contención y de limpieza:**  
*Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).  
Asegurar suficiente ventilación.*
- **6.4 Referencia a otras secciones**  
*Ver capítulo 7 para mayor información sobre una manipulación segura.  
Ver capítulo 8 para mayor información sobre el equipo personal de protección.  
Para mayor información sobre cómo desechar el producto, ver capítulo 13.*

### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura** *Abrir y manejar el recipiente con cuidado.*
- **Prevención de incendios y explosiones:**  
*Mantener alejadas las fuentes de encendido. No fumar.  
Proteger del calor.  
Tomar medidas contra las cargas electrostáticas.*
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** *Almacenar en un lugar fresco.*
- **Normas en caso de un almacenamiento conjunto:** *No es necesario.*
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**  
*Mantener el recipiente cerrado herméticamente.  
No cerrar el recipiente estanco al gas.  
Almacenarlo en envases bien cerrados en un lugar fresco y seco.  
Proteger del calor y de la luz directa del sol.*
- **7.3 Usos específicos finales** *No existen más datos relevantes disponibles.*

### SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**  
*Sin datos adicionales, ver punto 7.*
- **8.1 Parámetros de control**
- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** *Nulo.*
- **Indicaciones adicionales:** *Como base se han utilizado las listas vigentes en el momento de la elaboración.*
- **8.2 Controles de la exposición**
- **Equipo de protección individual:**
- **Medidas generales de protección e higiene:** *Lavarse las manos antes de las pausas y al final del trabajo.*
- **Protección respiratoria:** *Si la ventilación es insuficiente, usar protección respiratoria.*
- **Protección de manos:**  
*El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.  
Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.  
Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.*
- **Material de los guantes**  
*La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.*
- **Tiempo de penetración del material de los guantes**  
*El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.*

( se continua en página 4 )

# Ficha de datos de seguridad

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Nombre comercial: DUST-OFF FGSA MODEL

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## · Protección de ojos:



Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

## · 9.1 Información sobre propiedades físicas y químicas básicas

## · Datos generales

## · Aspecto:

Forma: Gas comprimido

Color: Claro

· Olor: Etéreo

· Umbral olfativo: No determinado.

· valor pH: No determinado.

## · Cambio de estado

Punto de fusión /campo de fusión: -117 °C

Punto de ebullición /campo de ebullición: -26,5 °C

· Punto de inflamación: No aplicable.

· Inflamabilidad (sólido, gaseiforme): No aplicable.

## · Temperatura de ignición:

Temperatura de descomposición: No determinado.

· Autoinflamabilidad: No determinado.

· Peligro de explosión: El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.

## · Límites de explosión:

Inferior: 4,9 Vol %

Superior: 20,2 Vol %

· Presión de vapor a 20 °C: 5100 hPa

· Densidad a 20 °C: 2,4 g/cm<sup>3</sup>

· Densidad relativa: No determinado.

· Densidad de vapor: No determinado.

· Velocidad de evaporación: No determinado.

· Solubilidad en / miscibilidad con agua a 20 °C: 5 g/l

· Coeficiente de reparto (n-octanol/agua): No determinado.

## · Viscosidad:

Dinámica: No determinado.

Cinemática: No determinado.

## · Concentración del disolvente:

Disolventes orgánicos: 0,0 %

VOC (CE) 100,00 %

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# Ficha de datos de seguridad

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· **9.2 Información adicional** No existen más datos relevantes disponibles.

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad**
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
  - **Toxicidad aguda**
- |   |                             |
|---|-----------------------------|
| · <b>Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:</b> |                             |
| 75-37-6 1,1-difluoroetano   |                             |
| Inhalatorio   | LC50/4 h   977 mg/l (mouse) |
- **Efecto estimulante primario:**
  - **Corrosión o irritación cutáneas** No produce irritaciones.
  - **Lesiones o irritación ocular graves** No produce irritaciones.
  - **Sensibilización respiratoria o cutánea** No se conoce ningún efecto sensibilizante.

### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:** Por regla general, no es peligroso para el agua
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

ES

( se continua en página 6 )

# Ficha de datos de seguridad

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## SECCIÓN 14: Información relativa al transporte

· 14.1 Número UN	UN1030
· ADR, IMDG, IATA	
· 14.2 Designación oficial de transporte de las Naciones Unidas	
· ADR	1030 1,1-DIFLUORETANO (GAS REFRIGERANTE R 152a)
· IMDG, IATA	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A)
· 14.3 Clase(s) de peligro para el transporte	
· ADR	
	
· Clase	2 2F Gases
· Etiqueta	2.1
· IMDG	
	
· Class	2.1
· Label	2.1
· IATA	
	
· Class	2 Gases
· Label	2.1
· 14.4 Grupo de embalaje	
· ADR, IMDG, IATA	suprimido
· 14.5 Peligros para el medio ambiente:	
· Contaminante marino:	No
· 14.6 Precauciones particulares para los usuarios	Atención: Gases
· Número Kemler:	23
· Número EMS:	F-D,S-U
· 14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC	No aplicable.
· Transporte/datos adicionales:	
· ADR	
· Cantidades limitadas (LQ)	0
· Cantidades exceptuadas (EQ)	Código: E0 No se permite como cantidad exceptuada
· Categoría de transporte	2
· Código de restricción del túnel	B/D

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# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 25.11.2015

Revisión: 25.11.2015

**Nombre comercial: DUST-OFF FGSA MODEL**

( se continua en página 6 )

· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	0
· <b>Excepted quantities (EQ)</b>	Code: E0 Not permitted as Excepted Quantity
· <b>"Reglamentación Modelo" de la UNECE:</b>	UN1030, 1,1-DIFLUORETANO (GAS REFRIGERANTE R 152a), 2.1

### SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Abreviaturas y acrónimos:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Press. Gas L: Gases under pressure: Liquefied gas

Flam. Liq. 1: Flammable liquids, Hazard Category 1