

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

## 1 Identification

- **Product identifier**
- **Trade name:** DUST-OFF PRO
- **Article number:** 70845-00, 70845-01, 70845-12
- **CAS Number:**  
75-37-6
- **EC number:**  
200-866-1
- **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: [info@emsdiasum.com](mailto:info@emsdiasum.com)  
[www.emsdiasum.com](http://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

Flammable Liquids 1

H224 Extremely flammable liquid and vapor.



GHS04 Gas cylinder

Gases under Pressure - Liquefied gas

H280 Contains gas under pressure; may explode if heated.



GHS07

Specific Target Organ Toxicity - Single Exposure 3 H336 May cause drowsiness or dizziness.

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



GHS02



GHS04



GHS07

- **Signal word** Danger
- **Hazard statements**  
Contains gas under pressure; may explode if heated.  
Extremely flammable liquid and vapor.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 1)

May cause drowsiness or dizziness.

· **Precautionary statements**

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

Ground/bond container and receiving equipment.

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

Use only non-sparking tools.

Take precautionary measures against static discharge.

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area.

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

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Call a poison center/doctor if you feel unwell.

In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Protect from sunlight. Store in a well-ventilated place.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1

Fire = 4

Reactivity = 1

· **HMIS-ratings (scale 0 - 4)**



Health = 1

Fire = 4

Reactivity = 1

· **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**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 2)

- In case of unconsciousness place patient stably in side position for transportation.*
- **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.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
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.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

10,000 ppm

· **PAC-2:**

15,000 ppm

· **PAC-3:**

25,000 ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
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.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 3)

- **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:**
  - Keep away from foodstuffs, beverages and feed.
  - Wash hands before breaks and at the end of work.
- **Breathing equipment:**
  - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **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

(Contd. on page 5)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 4)

· <b>Odor:</b>	<i>Ether-like</i>
· <b>Odor threshold:</b>	<i>Not determined.</i>
· <b>pH-value:</b>	<i>Not determined.</i>
· <b>Change in condition</b>	
<b>Melting point/Melting range:</b>	<i>-117 °C (-178.6 °F)</i>
<b>Boiling point/Boiling range:</b>	<i>-26.5 °C (-15.7 °F)</i>
· <b>Flash point:</b>	<i>&lt;23 °C (&lt;73.4 °F)</i>
· <b>Flammability (solid, gaseous):</b>	<i>Not determined.</i>
· <b>Decomposition temperature:</b>	<i>Not determined.</i>
· <b>Auto igniting:</b>	<i>Not determined.</i>
· <b>Danger of explosion:</b>	<i>Product is not explosive. However, formation of explosive air/vapor mixtures are possible.</i>
· <b>Explosion limits:</b>	
<b>Lower:</b>	<i>4.9 Vol %</i>
<b>Upper:</b>	<i>20.2 Vol %</i>
· <b>Vapor pressure at 20 °C (68 °F):</b>	<i>5,100 hPa (3.800 mm Hg)</i>
· <b>Density at 20 °C (68 °F):</b>	<i>0.91 g/cm<sup>3</sup> (7.59395 lbs/gal)</i>
· <b>Relative density</b>	<i>Not determined.</i>
· <b>Vapor density</b>	<i>Not determined.</i>
· <b>Evaporation rate</b>	<i>Not applicable.</i>
· <b>Solubility in / Miscibility with</b>	
<b>Water at 20 °C (68 °F):</b>	<i>5 g/l</i>
· <b>Partition coefficient (n-octanol/water):</b>	<i>Not determined.</i>
· <b>Viscosity:</b>	
<b>Dynamic:</b>	<i>Not determined.</i>
<b>Kinematic:</b>	<i>Not determined.</i>
<b>VOC content:</b>	<i>0.00 %</i>
<b>Solids content:</b>	<i>0.0 %</i>
· <b>Other information</b>	<i>No further relevant information available.</i>

### 10 Stability and reactivity

- **Reactivity** *No further relevant information available.*
- **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.*

US

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 5)

## 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.

- **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:**

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **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.

US

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS




Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 6)

## 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 (REFRIGERANT GAS R 152a)
· <b>IMDG, IATA</b>	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152a)
· <b>Transport hazard class(es)</b>	
· <b>DOT</b>	
	
· <b>Class</b>	2.1 Gases
· <b>Label</b>	2.1
· <b>ADR</b>	
	
· <b>Class</b>	2 2F Gases
· <b>Label</b>	2.1
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	2.1 Gases
· <b>Label</b>	2.1
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	Void
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Gases
· <b>Hazard identification number (Kemler code):</b>	23
· <b>EMS Number:</b>	F-D,S-U
· <b>Stowage Category</b>	B
· <b>Stowage Code</b>	SW2 Clear of living quarters.
· <b>Transport in bulk according to Annex II of MARPOL 73/78 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

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

Reviewed on 10/20/2022

Trade name: **DUST-OFF PRO**

(Contd. of page 7)

· <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>	UN 1030 1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152A), 2.1

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

· **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):**

ACTIVE

· **Hazardous Air Pollutants**

Substance is not 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)**

Substance is not listed.

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

Substance is not listed.

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

(Contd. on page 9)

US



# Safety Data Sheet

acc. to OSHA HCS

Printing date 10/20/2022

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Trade name: **DUST-OFF PRO**

(Contd. of page 8)

· **Hazard pictograms**· **Signal word** *Danger*· **Hazard statements***Contains gas under pressure; may explode if heated.**Extremely flammable liquid and vapor.**May cause drowsiness or dizziness.*· **Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Avoid breathing dust/fume/gas/mist/vapors/spray**Use only outdoors or in a well-ventilated area.**Wear protective gloves/protective clothing/eye protection/face protection.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**Call a poison center/doctor if you feel unwell.**In case of fire: Use CO2, powder or water spray to extinguish.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Store locked up.**Protect from sunlight. Store in a well-ventilated place.**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.*

· **Contact:**· **Date of preparation / last revision** 10/20/2022 / -· **Abbreviations and acronyms:**

*ADR: Accord relatif au transport international 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*

*IATA: International Air Transport Association*

*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)*

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

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety **Health***

***TLV: Threshold Limit Value***

***PEL: Permissible Exposure Limit***

(Contd. on page 10)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 10/20/2022

Reviewed on 10/20/2022

**Trade name: DUST-OFF PRO**

(Contd. of page 9)

*REL: Recommended Exposure Limit**Gases under Pressure - Liquefied gas: Gases under pressure – Liquefied gas**Flammable Liquids 1: Flammable liquids – Category 1**Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3*

US