

SAFETY DATA SHEET

according to Regulation (EU) 2015/830

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Difluoromethane (R32)

Revision 0

Revision date 2018-03-12

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

1.1. Product identifier

Product name	Difluoromethane (R32)
REACH Registration Number	01-2119471312-47
CAS No.	75-10-5
EC No.	200-839-4

1.2. Relevant identified uses of the substance or mixture and uses advised against

Product Use	[SU3] Industrial uses: Uses of substances as such or in preparations at industrial sites; ----- [SU22] Professional uses: Public domain (administration, education, entertainment, services, craftsmen);
Restricted use	[SU21] Consumer uses: Private households (= general public = consumers);
Description	Gas.

1.3. Details of the supplier of the safety data sheet

Company	Harp International Limited
Address	Gellihirion Industrial Estate Pontypridd Rhondda Cynon Taff CF37 5SX UK
Web	www.harpintl.com
Telephone	+44 (0)1443 842 255
Fax	+44 (0)1443 841 805
Email	harp@harpintl.com
Email address of the competent person	safety@harpintl.com

1.4. Emergency telephone number

Emergency telephone number	+44 (0) 1270 502891 24 Hours
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.2. Classification - EC 1272/2008	Flam. Gas 1: H220; Compressed gas: H280;
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2.2. Label elements

Hazard pictograms	 
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2.2. Label elements

Signal Word	Danger
Hazard Statement	Flam. Gas 1: H220 - Extremely flammable gas. Compressed gas: H280 - Contains gas under pressure; may explode if heated.
Precautionary Statement: Prevention	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Precautionary Statement: Response	P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely. P381 - Eliminate all ignition sources if safe to do so.
Precautionary Statement: Storage	P403 - Store in a well-ventilated place. P410+P403 - Protect from sunlight. Store in a well-ventilated place.

2.3. Other hazards

Other hazards	Contact with liquid may cause cold burns/frostbite.
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SECTION 3: Composition/information on ingredients

3.1. Substances

EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification	M-factor.
Difluoromethane (R32)		75-10-5	200-839-4	01-2119471312-47	90 - 100%	Flam. Gas 1: H220; Compressed gas: H280;	

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air.
Eye contact	Rinse immediately with plenty of water.
Skin contact	Frostbite: treat as thermal burns.
Ingestion	Ingestion is not considered a potential route of exposure.

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

Inhalation	Seek medical attention if irritation or symptoms persist.
Eye contact	Seek medical attention if irritation or symptoms persist.
Skin contact	Frostbite: treat as thermal burns.
Ingestion	Ingestion is not considered a potential route of exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Inhalation	If you feel unwell, seek medical advice (show the label where possible).
Eye contact	Seek medical attention if irritation or symptoms persist.
Skin contact	Seek medical attention if irritation or symptoms persist.
Ingestion	Ingestion is not considered a potential route of exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

	Use extinguishing media appropriate to the surrounding fire conditions.
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5.2. Special hazards arising from the substance or mixture

	Exposure to fire may cause containers to rupture/explode. If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Hydrogen fluoride, Carbon monoxide, Carbonyl fluoride.
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5.3. Advice for firefighters

	If possible, stop flow of product. In case of fire nearby, remove exposed containers. Do not extinguish a leaking gas flame unless absolutely necessary. Cool containers / tanks with water spray. Spontaneous/explosive re-ignition may occur.
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5.3. Advice for firefighters

Wear self contained breathing apparatus and protective clothing. EN 469:2005: Protective Clothing for fire-fighters.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Consider the risk of potentially explosive atmospheres. Evacuate personnel to a safe area. Ensure adequate ventilation of the working area. Eliminate all sources of ignition.
Vapours are heavier than air. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

6.2. Environmental precautions

Do not release into the environment.

6.3. Methods and material for containment and cleaning up

Recovery: Allow to evaporate. Keep area free from ignition sources until any spilled liquid has evaporated.
Elimination: See chapter 13.

6.4. Reference to other sections

See section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION for further information.
See section 13. DISPOSAL CONSIDERATIONS for further information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Take precautionary measures against static discharges. Ensure equipment is adequately earthed. Purge air from system before introducing gas. Assess the risk of potentially explosive atmosphere and the need for explosion-proof equipment. Protect cylinders from physical damage; do not drag, roll, slide or drop. Never attempt to repair or modify container valves or safety relief devices. Close container valve after each use and when empty, even if still connected to equipment. Never use direct flame or electrical heating devices to raise the pressure of a container.

7.2. Conditions for safe storage, including any incompatibilities

Keep container below 50°C. Keep container in a well-ventilated place. Keep away from sources of ignition - No smoking. Keep away from combustible material. All equipment in storage areas should be compatible with the risk of potentially explosive atmosphere.

Suitable packaging

Stainless steel. Steel.

7.3. Specific end use(s)

See section 1.2. Relevant identified uses of the substance or mixture and uses advised against for further information.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure controls.

DNEL: Derived no-effect level.

Exposure Pattern - Workers

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Long-term - inhalation - Systemic effects 7.035 mg/m³

Exposure Pattern - General population

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Exposure Pattern - General population

Difluoromethane (R32)	Long-term - inhalation - Systemic effects 750 mg/m ³
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8.2. Exposure controls

	
8.2.1. Appropriate engineering controls	Consider work permit system e.g. for maintenance activities. Ensure adequate ventilation of the working area. Product to be handled in a closed system.
8.2.2. Individual protection measures	Wear protective clothing.
Eye / face protection	Safety eyewear, goggles or face-shield to EN166 should be used to avoid exposure to liquid splashes.
Skin protection - Handprotection	Protective gloves against cold to EN511.
Skin protection - Other	Wear suitable protective clothing. Safety footwear to ISO 20345.
Respiratory protection	Wear suitable respiratory equipment when necessary.
Thermal hazards	If there is a risk of contact with the liquid, all protective equipment should be suitable for extremely low temperatures.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Gas
Colour	Clear
Odour	Slight
Melting point	-136 °C
Initial boiling point	-51.7 °C
Flammability (solid, gas)	14%(v) - 33%(v)
Vapour pressure	13.8 bar @20°C
Relative density	1.8 (H ₂ O = 1 @ 20 °C)
Water solubility	280000 mg/l
Partition coefficient	0.2 log Pow
Autoignition temperature	648 °C
Fat Solubility	No data available
Explosive properties	No data available
Oxidising properties	No data available
Vapour density	No data available
Freezing Point	No data available
Odour threshold	No data available
pH	No data available
Flash point	Not applicable.
Evaporation rate	Not applicable.
Viscosity	Not applicable.
Solubility	No data available

9.2. Other information

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9.2. Other information

Conductivity	No data available
Gas group	No data available
Benzene Content	No data available
Lead content	No data available
VOC (Volatile organic compounds)	Not applicable.
Surface tension	Not applicable.

Further information

	Vapours are heavier than air. May accumulate in confined spaces, particularly at or below ground level.
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SECTION 10: Stability and reactivity

10.1. Reactivity

	Stable under normal conditions.
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10.2. Chemical stability

	Stable under normal conditions.
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10.3. Possibility of hazardous reactions

	Can form a potentially explosive atmosphere in air. May react violently with oxidants.
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10.4. Conditions to avoid

	Keep away from heat and sources of ignition. Avoid contact with flames and red hot metallic surfaces.
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10.5. Incompatible materials

	Air. Strong oxidising agents. Moisture. Alkali metals. Alkaline earth metals.
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10.6. Hazardous decomposition products

	Under normal conditions of storage and use, hazardous decomposition products should not be produced. If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Hydrogen fluoride. Carbonyl Fluoride. Carbon Monoxide.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Highly unlikely - but should this occur freeze burns will result.
Skin corrosion/irritation	Ejection of liquefied gas : frostbite possible.
Serious eye damage/irritation	Ejection of liquefied gas : frostbite possible.
Respiratory or skin sensitisation	Non-irritant. It is not a skin sensitiser.
Germ cell mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
STOT-single exposure	No data available.
STOT-repeated exposure	No data available.
Aspiration hazard	Not applicable.
Repeated or prolonged exposure	An inhalation study in animals has shown that repeated exposures produce no significant effects.

11.1.4. Toxicological Information

Difluoromethane (R32)	Inhalation Rat LC50/4 h: >520000 ppm
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SECTION 12: Ecological information

12.1. Toxicity

No data available

12.2. Persistence and degradability

Not readily biodegradable.

12.3. Bioaccumulative potential

Does not bioaccumulate.

Partition coefficient

Difluoromethane (R32) 0.2 log Pow

12.4. Mobility in soil

Not applicable.

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating, toxic (PBT), nor very persistent, very bioaccumulating (vPvB).

12.6. Other adverse effects

Global Warming Potential (GWP) - Contains fluorinated greenhouse gases covered by the Kyoto protocol. 550.

Further information

When discharged in large quantities may contribute to the greenhouse effect.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Avoid discharge to atmosphere. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Toxic and corrosive gases formed during combustion should be scrubbed before discharge to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Dispose of in compliance with all local and national regulations.

Disposal methods

Contact a licensed waste disposal company.

SECTION 14: Transport information

Hazard pictograms



14.1. UN number

UN3252

14.2. UN proper shipping name

DIFLUOROMETHANE

14.3. Transport hazard class(es)

ADR/RID

2

Subsidiary risk

-

IMDG

2.1

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14.3. Transport hazard class(es)

Subsidiary risk	-
IATA	2.1
Subsidiary risk	-

14.4. Packing group

Packing group	-
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14.5. Environmental hazards

Environmental hazards	No
Marine pollutant	No

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

	No data is available on this product.
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ADR/RID

Hazard ID	23
Tunnel Category	(B/D)

IMDG

EmS Code	F-D S-U
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IATA

Packing Instruction (Cargo)	200
Maximum quantity	150 kg
Packing Instruction (Passenger)	FORBIDDEN
Maximum quantity	FORBIDDEN

Further information

	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Before transporting product containers ensure that they are firmly secured. Ensure compliance with applicable regulations.
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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulations	REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC. Regulation (EU) No. 517/2014 of the European Parliament and the Council on certain fluorinated greenhouse gases.
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15.2. Chemical safety assessment

	A CSA does not need to be carried out for this product.
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SECTION 16: Other information

Other information

Text of Hazard Statements in Section 3	Flam. Gas 1: H220 - Extremely flammable gas. Compressed gas: H280 - Contains gas under pressure; may explode if heated.
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Further information

	The information supplied in this Safety Data Sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and
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Further information

	belief at the date of publication however no guarantee is made to its accuracy. This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process.
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