



Safety Data Sheet

Applicant name: Zhejiang Quhua Fluor-Chemistry Co., Ltd

Product Name: Difluoromethane

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**Edit institution: Zhejiang Academy of Science and Technology for
Inspection and Quarantine**

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1. Identification of substance

Product Name	Difluoromethane
Other Name	R32
Chemical Name	Difluoromethane
Recommended Use	Mainly used in single component refrigerants or zeotropic blends to replace difluorochloromethane.
Manufacturer Name	Zhejiang Quhua Fluor-Chemistry Co., Ltd
Address	Juhua Group Corporation, Kecheng district, Quzhou city, Zhejiang province / 324004
Phone Number	+86-570-3614400
Fax Number	+86-570-3098687
WEB	http://www.juhua.com
Emergency Phone Number	+86-570-3097819 or Call your nearest poison control centre.

2. Hazards identification

GHS classification	Flammable gases 1 Gases under pressure (Liquefied gas)
GHS Pictograms	
Signal words	Danger
Hazard statements	H220: Extremely flammable gas H280: Contains gas under pressure; may explode if heated
Precautionary Statement Prevention	P210 : Keep away from heat/sparks/open flames/hot surfaces.-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.
Other hazards which do not result in classification	Not applicable.

3. Composition/information on ingredients

Substances

Mixtures

Component Information

Component	CAS number	EINECS number	Mass(%)
Difluoromethane	75-10-5	200-839-4	≥99.80%wt

Note: 1. Unless a component presents a severe hazard, it does not need to be considered in

the SDS if the concentration is less than 1%

4. First-aid measures

NOTE TO PHYSICIAN	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.
After inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Get immediate medical attention.
After skin contact	Immediately flush skin with plenty of water. Remove and isolate contaminated clothing and shoes. If irritation persists, get medical attention immediately. For minor skin contact, avoid spreading material on unaffected skin. Wash clothing separately before reuse.
After eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Assure adequate flushing of the eyes by separating the eyelids with fingers. Get medical attention immediately.
After ingestion	Not applicable.
Most important symptoms/effects, acute and delayed	Not applicable.

5. Fire-fighting measures

Suitable extinguishing agents	Water spray, plenty of water.
Special hazards caused by the material, its products of combustion or flue gases	Can be released in case of fire: Carbon oxides, Hydrogen fluoride, Fluorocarbon acid.
Protective equipment for fire-fighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

6. Accidental release measures

Person-related safety precautions	Ensure adequate ventilation. Remove all sources of ignition. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Evacuate personnel to safe areas.
Measures for environmental protection	Prevent further leakage or spillage if safe to do so. Do not allow material to be released to the environment without proper governmental permits.
Measures for cleaning/collecting	Reasonable ventilation, spread rapidly.
Additional information	See Section 7 for information on safe handling See section 8 for information on personal protection equipment. See Section 13 for information on disposal.

7. Handling and storage

Handling

Information for safe handling

Closed operation, overall ventilation. Operator must be in special training and obey the operation regulations strictly. Keep away from flammable and combustible materials. High concentration contact can wear self absorption filter type gas mask (semi mask), wear general working clothes, gloves. Prevent gas from leaking into workplace air.

Information about protection against explosions and fires

Store away from oxidizing agents. When handling light discharge, to prevent the cylinder and accessories damage. Equipped with leak emergency processing equipment.

STORAGE

Requirements to be met by storerooms and containers

Keep in a cool, well-ventilated place. Store away from fire, heat, flammable, combustible, oxidants. Prevent direct sunlight. Temperature should not exceed 30 °C. Avoid mixed store. Equipped with leak emergency processing equipment. Pay attention to name, inspection date, first use of early into the warehouse.

Information about storage in one common storage facility

No data available.

Further information about storage conditions

No data

8. Exposure controls/personal protection

Limit Values for Exposure

Component

CAS number	ACGIH TLV-TWA	ACGIH TLV-STEL	NIOSH PEL-TWA	NIOSH PEL-STEL
75-10-5	N.E.	N.E.	N.E.	N.E.

Difluoromethane
 Appropriate engineering controls

Production process closed, overall ventilation.

General protective and hygienic measures

Avoid inhalation of high concentrations. Enter tank, confined space or other area of high concentration of work, must have someone monitoring.

Personal protective equipment

Wear general working clothes, gloves, protective glasses.

Breathing equipment

When workers are facing high concentrations they must use appropriate certified respirators.

Protection of hands
 Eye/Face protection

Wear appropriate chemical resistant gloves. Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.

Body protection

Use clean protective body-covering as needed to minimize contact with clothing and skin.

Note: 1. N.E. means not established.

9. Physical and chemical properties

Appearance (physical state, colour etc)	Colorless transparent liquid(Liquefied gas, liquid at room temperature)
Odour	Ether-like
pH	No data available
Melting point/freezing point	-136 °C
Boiling point and boiling range	-51.7 °C
Flash point	Insignificance
Evaporation rate	No data available
Flammability	Extremely flammable
Upper/lower flammability or explosive limits	Upper explosive limit: 33.4% (V) ; lower explosive limit: 12.7% (V)
Vapour pressure	202.65, -28.4 °C
Vapour density(air=1)	1.8
Density/Relative density	1.1
Solubility(water)	4.4 g/L (25 °C)
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	680 °C
Decomposition temperature	No data available
Viscosity	No data available

10. Stability and reactivity

Chemical stability	This is a stable chemical under recommended storage conditions.
Possibility of hazardous reactions	No polymerization reaction.
Conditions to avoid (e.g. static discharge, shock or vibration)	Heat, flames and sparks. The extreme temperatures and direct sunlight.
Incompatible materials	Avoid contact with strong oxidizing agents, alkali metals, alkaline earth metal, flammable or combustible materials.
Hazardous decomposition products	Carbon oxides, Hydrogen fluoride, Fluorocarbon acid.

11. Toxicological information

Routes of Entry: Dermal contact, eye contact, inhalation, ingestion.

Acute Toxicity

Difluoromethane(CAS 75-10-5)	LD50 (Oral,rat) : N/A LC50 (Inhalation,rat) : 49,900 mg/m ³ (4 h) LD50 (Dermal,rabbit) : N/A
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Skin corrosion/Irritation Serious	Not classified
eye damage/irritation	Not classified
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
Chronic Effects	Not classified
Further Information	No data

12. Ecological information

Ecotoxicity	
Aquatic Toxicity	Difluoromethane(CAS 75-10-5) Test & Species 96 Hr LC50 fish: N/A 48 Hr EC50 Daphnia: N/A 72 Hr EC50 Algae: N/A
Persistence and degradability	Not available
Bioaccumulative potential	Not available
Mobility in soil	Not available
Additional Information	Not available

13. Disposal considerations

WASTE DISPOSAL INSTRUCTIONS

Contact a licensed professional waste disposal service to dispose of this material.
 Dispose of in accordance with local environmental regulations or local authority requirements.

14. Transport information

The Recommendation of Transport of Dangerous Goods(TDG)	
UN Number	UN 3252
Proper Shipping Name	DIFLUOROMETHANE (REFRIGERANT GAS R 32)
Class/Division	Division 2.1 Flammable Gases
Package Group	None
Subsidiary risk	None
labelling pictogram	



Maritime transport IMDG Being same with TDG
 Air transport ICAO-TI and IATA-DGR Being same with TDG

15. Regulatory information

European/International Regulations

OSHA: Hazardous by definition of Hazard Communication Standard(29CFR 1910.1200).
EINECS Status: This chemical is included in EINECS inventory.
EPA TSCA Status: This chemical is included in TSCA inventory.
Canadian DSL(Domestic Substances List): This chemical is included in DSL.
HMIS(Hazardous Material Identification System Ratings): Health: 0
 Flammability: 4
 Physical hazard: 1
 Personal protection:E
 (4. Severe Hazard; 3. Serious Hazard; 2. Moderate Hazard; 1. Slight Hazard; 0. Minimal Hazard)
WHMIS(Canadian Workplace Hazardous Material Identification System Ratings): Not listed.
GB 12268-2012 List of dangerous goods This chemical is a dangerous goods on the GB 12268-2012 list of dangerous goods.

16. other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

This Material Safety Data Sheet was based on the "Globally Harmonized System of Classification and Labelling of Chemicals", "Recommendations on the TRANSPORT OF DANGEROUS GOODS Model Regulations", "INTERNATIONAL MARITIME DANGEROUS GOODS CODE", " International Air Transport Association Dangerous Goods Regulations", the National Standards and other related dangerous chemicals management laws, regulations and standards, which are periodically updated and changed. To make dangerous goods / hazardous chemicals comply with the relevant requirements of the latest management, regularly update is recommended.

This Material Safety Data Sheet has been compiled in both English and Chinese. For any discrepancies , the Chinese version shall prevail.

Abbreviations and acronyms ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
IMDG: International Maritime Code for Dangerous Goods
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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