



SAFETY DATA SHEET (SDS)

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Identification of the substance:

Name: R32
CAS Number: 75-10-5
EC Number: 200-839-4
REACH Number: 01-2119471312-47-0000

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

Recommended use:

Refrigerant

Industrial and professional

1.3. Details of the supplier of the safety data sheet

Company:

TAZZETTI S.P.A

CORSO EUROPA 600/A

10088 VOLPIANO (TO) - ITALY-

Tel. +39 011 97021

Fax +39 011 9702460

rsg.inquiry@tazzetti.com

1.4. Emergency telephone number

Ph +39 02 66101029 (24 h / 24 h) - Poison centre Niguarda Hospital of Milan (Italy)

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP):

Warning, Flam. Gas 1, Extremely flammable gas.

Warning, Press. Gas, Contains gas under pressure.

2.2. Label elements

Symbols:



Danger

Hazard statements:

H220 Extremely flammable gas

H280 Contains gas under pressure; may explode if heated.

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P377 Leaking gas fire: do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

P410+403: Protect from sunlight. Store in a well ventilated place.

Special Provisions: N.A.



2.3. Other Hazards

vPvB Substances: None - PBT Substances: None

Contact with liquid may cause cold burns/frostbite.

In high concentration may be asphyxiant.

Vapour heavier than air, may accumulate below ground level and cause choking.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Identification of the substance:

Name:	R32
Chemical name:	Difluoromethane
CAS Number:	75-10-5
EC Number:	200-839-4
REACH Number:	01-2119471312-47-0000

3.2. Mixtures Not applicable

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

In case of skin contact:

In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

Take off all contaminated clothing immediately.

In case of eyes contact:

In case of contact with eyes, rinse immediately (for at least 15 minutes) with plenty of water and seek medical advice.

In case of ingestion:

Obtain medical assistance.

In case of inhalation:

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

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

Inhalation of high concentration may cause central nervous system depression resulting in dizziness, weakness, nausea, headache and possibly unconsciousness. Anaesthetic effects, light-headedness, confusion, incoordination drowsiness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness.

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

Treatment: Do not give adrenaline or similar drugs.

SECTION 5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:

CO2 or dry chemical fire extinguisher.

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Containers may explode if heated

Do not inhale explosion and combustion gases. Hazardous thermal decomposition products: carbon oxides, hydrogen fluoride, fluorinated compounds.



5.3. Advice for fire-fighters

Use self-contained breathing apparatus and chemically protective clothing.
Collect separately contaminated water used to extinguish the fire. Not be discharged into drains.
If feasible in terms of safety, move from immediate danger undamaged containers.
Cool the containers exposed to the fire with water.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Provide adequate ventilation.
Remove all sources of ignition.
Evacuate area.
Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and materials for containment and cleaning up

Reduce vapour with fog or fine water spray.
Provide containment for water used
Wash with plenty of water
Ventilate area

6.4. Reference to other sections

See also section 8 and 13

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Do not allow backfeed into the container.
Use only equipment suitable for the product and the operating pressure
Take precautionary measures against static discharge.
Keep away from ignition sources (including static discharges).
Avoid contact with skin and eyes, inhalation of vapours and mists.
Use localized ventilation system.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
Contaminated clothing should be changed before entering eating areas.
Do not eat or drink while working.
Do not smoke while working.
Only experienced and properly instructed persons should handle compressed gases.
The substance must be handled in accordance with good industrial hygiene and safety procedures.
Close container valve after each use and when empty, even if still connected to equipment.
Never attempt to repair or modify container valves or safety relief devices.
Replace valve outlet caps or plugs and container caps where supplied as soon as container is disconnected from equipment.
Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.
Never use direct flame to raise the pressure of a container.



See also section 8 for recommended protective equipment.

Purge air from system before introducing gas.

Ensure the complete gas system was (or is regularly) checked for leaks before use.

Assess the risk of potentially explosive atmosphere and the need for explosion-proof equipment.

Consider the use only non-sparking tools.

Protect cylinders from physical damage; do not drag, roll, slide or drop.

If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.

7.2. Conditions for safe storage, including any incompatibilities

Observe all regulations and local requirements regarding storage of containers.

All electrical equipment in the storage areas should be compatible with the risk of potentially explosive atmosphere.

Keep container below 50°C in a well ventilated area.

Keep away from ignition sources (including static discharges).

Do not store near oxidizing containers.

Always keep in a well ventilated place.

Keep away from unguarded flame, sparks, and heat sources.

Keep away from food, drink and feed.

Segregate from oxidant gases and other oxidants in store.

Incompatible materials:

None in particular. See also section 10.

Instruction as regards storage premises:

Adequately ventilated.

Containers should not be stored in conditions likely to encourage corrosion.

7.3. Specific end use(s)

If annexed, please make reference to the scenario

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Long Term Exposure Limit (LTEL): 8 h, TWA 1000 ppm

8.2. Exposure controls

The product should be handled in a closed circuit..

Provide adequate general and local ventilation.

Make sure the exposure is well below the occupational exposure limits.

If the risk assessment indicates this is necessary, use the following protection

Eye protection:

If foreseeable a risk of spurts or squirts, please wear safety glasses with lateral protection in compliance with rule of law EN 166.

Protection for skin:

Protective clothing

Protection for hands:

If foreseeable a direct contact with liquid or with cold machineries/equipments for which exist a risk of cold burn, please use cold protection gloves in compliance with rule of law EN511 – 020.

Respiratory protection:

Wear self-contained breathing apparatus in compliance with EN 137 when entering area unless atmosphere is proved to be safe.

Thermal Hazards:

Contact with liquid may cause cold burns/frostbite.

Environmental exposure controls:

Refer to environment legislation

Contact with liquid may cause cold burns/frostbite.

In high concentrations may cause asphyxiation.

Vapour heavier than air, may accumulate below ground level and cause choking.



SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance and colour:	Gas, Incolour
Odour:	Ether
pH:	Not applicable to substance
Melting point / freezing point:	-136 °C
Initial boiling point and boiling range:	-51.7 °C
Solid/gas flammability:	Extremely flammable
Upper/lower flammability or explosive limits:	from 14.0 to 31.0 % (V/V)
Vapour Density:	Not available
Flash point:	Not available
Vapor pressure:	17 bar (25 °C)
Density:	1.1 g/cm ³
Solubility in water:	Not available
Partition coefficient (n-octanol/water):	Log pow: 0.2
Autoignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available
Explosive properties:	Not applicable to substance
Oxidising properties:	Not applicable to substance

9.2. Other informations

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

Hazardous polymerisation does not occur.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Vapours may form flammable mixture with air.

May react violently with oxidants.

10.4. Conditions to avoid

Keep away from: heat, flames, and sparks. Don't smoke.

Keep away from ignition sources

10.5. Incompatible materials

Alkali metals, alkaline earth metals, powdered metals, powdered metal salts.

10.6. Hazardous decomposition products

Hydrogen fluoride, carbon oxides, fluorocarbons, carbonyl fluoride.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxicological information of the substance:

Acute toxicity:

CL50/4h - inhalation – rat = 1890 g/m³

CL50/4h - inhalation – mouse = 1810 g/m³

Skin corrosion/irritation: no effects known for this product



Serious eye damage/irritation: no effects known for this product
Respiratory or skin sensitisation: no effects known for this product
Germ cell mutagenicity: no effects known for this product
Carcinogenicity: no effects known for this product
Reproductive toxicity: no effects known for this product
STOT — repeated exposure: no effects known for this product
Aspiration hazard: no effects known for this product

SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

Not available

12.2. Persistence and degradability: not readily biodegradable

12.3. Bioaccumulative potential: bioaccumulation is unlikely

12.4. Mobility in soil: Not available

12.5. Results of PBT and vPvB assessment

vPvB Substance: None - PBT substance: None

12.6. Other adverse effects:

GWP: 675

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

Gas may be scrubbed in water.

Avoid discharge in 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.

Contact supplier if guidance is required.

SECTION 14. TRANSPORT INFORMATIONS

14.1. UN Number

ONU ADR/RID/IMDG/IATA -Number: 3252

14.2. UN proper shipping name

ADR/RID/IMDG - shipping name: DIFLUOROMETHANE (REFRIGERANT GAS R32)

IATA Technical name: DIFLUOROMETHANE (REFRIGERANT GAS R32)

14.3. Transport hazard class(es)

ADR/RID - Class: 2

ADR - Label: 2.1

RID - Label: 2.1 (+13)

ADR/RID - Hazard identification number: 23

Classification code: 2F

IATA/IMDG - Class: 2.1



14.4. Packing group
ADR - Packing group: -

14.5. Environmental hazards: No

14.6. Special precautions for user

ADR-Tunnel restriction code: B/D

IATA - Passenger aircraft: Not available

IATA - Cargo Aircraft: Not available

IMDG EmS: F-D, S-U

Ensure there is adequate ventilation

Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

Compliance with applicable regulations.

Before transporting product containers :

- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.

Avoid transport on vehicles where the load space is not separated from the driver's compartment.

14.7. Transport in bulk according to annex II of MARPOL 73/78 and the IBC code: N.A.

SECTION 15. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Dir. 67/548/EEC (Classification, packaging and labelling of dangerous substances). Dir. 99/45/EEC (Classification, packaging and labelling of dangerous preparations). Dir. 98/24/EC (Risks related to chemical agents at work). Dir. 2000/39/EC (Occupational exposure limit values); Dir. 2006/8/CE. Regulation (CE) n. 1907/2006 (REACH), Regulation (CE) n. 1272/2008 (CLP), Regulation (CE) n. 790/2009 (1° ATP CLP), Regulation (EU) n. 830/2015

Where applicable, refer to the following regulatory provisions :

Directive 2003/105/CE ('Activities linked to risks of serious accidents') and subsequent amendments.
1999/13/EC (VOC directive)

15.2. Chemical safety assessment: yes

SECTION 16. OTHER INFORMATION

Revised safety data sheet in accordance with commission regulation (EU) No 830/2015

Ensure operators understand the flammability hazard.

Users of breathing apparatus must be trained.

Ensure operators understand the toxicity hazard.

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

CCNL - Appendix 1

EIGA

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.



Classification in accordance with calculation methods of regulation (EC) 1272/2008 CLP / (EC) 1999/45 DPD.
The MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (divisione della American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
LTE:	Long-term exposure.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STE:	Short-term exposure.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWATLV:	Threshold Limit Value for the Time Weighted Average 8 hour day. (ACGIH Standard).
N.A.	Not available