

Trade name: R152a**Current version:** 3.0.0, Revision: 29.06.2026**Replaced version:** 2.0.0, Revision: 04.08.2025**Region:**
GER**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name****R152a**

Substance name 1,1-difluoroethane
REACH registration no. 01-2119474440-43

Identification numbers

CAS no. 75-37-6
EC no. 200-866-1

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

Industrial Use
Professional use
Pure chemical
Formulation of mixtures

glass manufacture
Manufacture of gas mixtures in pressure vessels
Refrigerant

Uses advised against

Consumer use

1.3 Details of the supplier of the safety data sheet**Address**

TEGA-Technische Gase und Gasetechnik GmbH
Werner-von-Siemens-Straße 18
97076 Würzburg

Telephone no. +49 931 2093-220
Fax no. +49 931 2093-180
e-mail kaeltmittel@tega.de

Advice on Safety Data Sheet

sdb_info@umco.de

1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification in accordance with Regulation (EC) No 1272/2008 (CLP)**

Flam. Gas 1A; H220
Press. Gas liq.; H280

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)**

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GER**Product identifier**

75-37-6 (1,1-difluoroethane)

Hazard pictograms

GHS02



GHS04

Signal word

Danger

Hazard statement(s)

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 In case of leakage, eliminate all ignition sources.
P403 Store in a well-ventilated place.

Supplemental label elements

Contains fluorinated greenhouse gas

2.3 Other hazards

This product does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher. Contact with the liquid can cause cold burns or frostbite.

PBT assessment

The product is not considered to be a PBT.

vPvB assessment

The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients**3.1 Substances****Chemical characterization**

Substance name 1,1-difluoroethane
Formula C₂H₄F₂
Molecular weight 66,1

Identification numbers

CAS no. 75-37-6
EC no. 200-866-1

Other information

Note	Specific concentration limits	M-factor (acute)	M-factor (chronic)
U	-	-	-

Full text for the notes: pls. see section 16 "Notes relating to the identification, classification and labelling of substances ((EC) No 1272/2008, Annex VI)".

3.2 Mixtures

Not applicable. The product is not a mixture.

SECTION 4: First aid measures**4.1 Description of first aid measures****General information**

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In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Remove affected person from danger area, lay him down. Seek medical advice immediately.

After inhalation

Remove affected persons from dangerous area by observing suitable respiratory protection measures. Ensure supply of fresh air. Irregular breathing/no breathing: artificial respiration. Call a doctor immediately.

After skin contact

In case of contact with skin wash off immediately with soap and water. Rinse with much water in case of frostbites. Remove clothes only after unfreezing. Cover wounds with sterile dressing. Call a doctor immediately.

After eye contact

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

After ingestion

Rinse the mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed**Symptoms**

Shortness of breath; respiratory arrest. Frostbite

4.3 Indication of any immediate medical attention and special treatment needed

Thaw frosted parts with lukewarm water. Do not rub affected area. Get medical attention immediately.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

Extinguishing powder; Water spray jet; Water mist; Foam

Unsuitable extinguishing media

High power water jet; Carbon dioxide

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon monoxide and carbon dioxide; Hydrogen fluoride (HF); Carbonyl fluoride; May explode if exposed to heat. Liquefied gas: Spilled liquid can cause cold burns. This gas is heavier than air and may accumulate in low areas.

5.3 Advice for firefighters

Use self-contained breathing apparatus. Wear full protective suit. Containers close to fire should be transferred to a safe place. Cool closed containers exposed to fire with water. Pressure increase, bursting and explosion hazard during heating. Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation. Keep away from ignition sources. Do not breathe gas. Cordon and mark contaminated area. Remove persons to safety. Risk of explosion.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Avoid release in the environment. Suppress gases/vapours/mists with water spray jet.

6.3 Methods and material for containment and cleaning up

Ensure adequate ventilation. Dispose of absorbed material in accordance with the regulations.

6.4 Reference to other sections

Information regarding safe handling, see section 7. Information regarding personal protective measures, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Only qualified and trained persons are authorised to handle. Provide good ventilation at the work area (local exhaust ventilation, if necessary). To be used only according to instructions for use. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers heat or sources of ignition. In case of accidental release: danger due to low temperature of the liquid product. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentration higher than the occupational exposure limits. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use. Comply with the health and safety at work laws.

General protective and hygiene measures

Wash hands before breaks and after work. Do not inhale gases. Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Have emergency shower available.

Advice on protection against fire and explosion

Vapours can form an explosive mixture with air. Isolate from sources of heat, sparks and open flame. Take precautionary measures against electrostatic loading (earthing necessary during loading operations). Use explosion-proof equipment/ fittings and non-sparking tools. Electrical equipment should be protected to the appropriate standard.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed in a cool, well-ventilated place, open and handle carefully. Protect from heat and direct sunlight.

Recommended storage temperature

Value < 50 °C

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in containers of same material as the original.

Incompatible products

Do not store together with: combustible materials; oxidizing agents; oxidizing substances; spontaneously combusting substances; explosive substances

Storage Class according TRGS 510

2A Gases (except aerosol dispensers and lighters)

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNEL, DMEL and PNEC values

DNEL values (worker)

No	Substance name			CAS / EC no
	Route of exposure	Exposure time	Effect	Value
1	1,1-difluoroethane			75-37-6 200-866-1
	inhalative	Long term (chronic)	systemic	2713 mg/m ³

DNEL value (consumer)

No	Substance name			CAS / EC no
	Route of exposure	Exposure time	Effect	Value

1	1,1-difluoroethane	75-37-6 200-866-1
	inhalative Long term (chronic) systemic	675 mg/m ³

PNEC values

No	Substance name	CAS / EC no
	ecological compartment Type	Value
1	1,1-difluoroethane	75-37-6 200-866-1
	water fresh water	0,948 mg/L
	water marine water	0,095 mg/L
	water fresh water sediment	0,19 mg/kg dry weight
	water marine water sediment	0,019 mg/kg dry weight
	soil -	0,141 mg/kg dry weight

8.2 Exposure controls**Appropriate engineering controls**

Ensure adequate ventilation, local exhaust at the work station if necessary. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Personal protective equipment**Respiratory protection**

Self-contained breathing apparatus. In case of insufficient ventilation or long-term effect use breathing apparatus.

Respiratory filter (gas) : AX

Eye / face protection

Tightly fitting safety glasses (EN 166).

Hand protection

Low-temperature-resistant gloves (EN 511). Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material Leather

Other

Chemical-resistant work clothes. Fire-resistant antistatic protective clothing. Protective shoes.

Environmental exposure controls

Information regarding waste disposal, see chapter 13.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

State of aggregation
gas
Form
liquified gas
Colour
colourless
Odour
odourless
pH value
Not applicable

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reason for missing pH Source	substance/mixture is a gas supplier
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Boiling point / boiling range	
Value	-25 °C
Source	supplier

Melting point/freezing point	
Value	-117 °C
Source	supplier

Decomposition temperature	
No data available	

Flash point	
No data available	

Ignition temperature	
No data available	

Auto-ignition temperature	
Value	440 °C
Source	supplier

Flammability	
highly flammable	
Source	supplier

Lower explosion limit	
Value	4 % vol
Source	supplier

Upper explosion limit	
Value	20,2 % vol
Source	supplier

Vapour pressure	
Value	514,6 kPa
Reference temperature	25 °C
Source	supplier

Relative vapour density	
Value	2,3
Source	supplier
Comments	Air = 1

Relative density	
No data available	

Density	
No data available	

Solubility in water	
Value	3200 mg/l
Reference temperature	21 °C
Source	supplier

Solubility	
No data available	

Partition coefficient n-octanol/water (log value)			
No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
log Pow		1,13	
Reference temperature		25 °C	

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with reference to Method Source	pH 7 QSAR ECHA
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Kinematic viscosity			
Value	0,263	mPa*s	
Reference temperature	50	°F	
Source	supplier		

Particle characteristics	
Not applicable	
Source	supplier

9.2 Other information

Other information
Critical temperature: 113 °C

SECTION 10: Stability and reactivity**10.1 Reactivity**

Dangerous reactions are not expected if the product is handled according to its intended use.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

May react violently with oxygen-rich (oxidizing) material. Risk of explosion. Risk of formation of explosive gas mixtures in air.

10.4 Conditions to avoid

T > 48 °C; Heat, naked flames and other ignition sources.

10.5 Incompatible materials

Oxidizing agents; humidity

10.6 Hazardous decomposition products

None, if handled according to intended use.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

Acute oral toxicity			
No data available			

Acute dermal toxicity			
No data available			

Acute inhalational toxicity			
No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
LC50	>	437500	ppmV
Duration of exposure		4	h
State of aggregation	Gas		
Species	rat		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Skin corrosion/irritation			
No data available			

Serious eye damage/irritation			
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No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
Type of examination		in vitro gene mutation study in bacteria	
Species		Salmonella typhimurium / Escherichia coli	
Method		OECD 471	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Type of examination		In vitro Mammalian Chromosomal Aberration Test	
Species		Human Lymphocyte	
Method		OECD 473	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Route of exposure		inhalational	
Type of examination		Mammalian Erythrocyte Micronucleus Test, In vivo	
Species		rat	
Method		OECD 474	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	

Reproduction toxicity

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
Route of exposure		inhalational	
NOAEC		>= 30000 ppm	
Type of examination		Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test	
Species		rat	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	

Carcinogenicity

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
Route of exposure		inhalational	
Duration of exposure		104 week/s	
Type of examination		Toxicity study	
Species		rat	
Method		OECD 453	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	

STOT - single exposure

No data available

STOT - repeated exposure

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
Route of exposure		inhalational	
Species		rat	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	

Aspiration hazard

No data available

11.2 Information on other hazards

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GER**Endocrine disrupting properties**

No data available

Other information

No data available.

SECTION 12: Ecological information**12.1 Toxicity****Toxicity to fish (acute)**

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
LC50	appr.	295,8	mg/l
Duration of exposure		96	h
Species	fish		
Method	QSAR		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Toxicity to fish (chronic)

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
NOEC		20,62	mg/l
Species	fish		
Method	(Q)SAR		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Toxicity to Daphnia (acute)

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
EC50	appr.	147	mg/l
Duration of exposure		48	h
Species	Daphnia		
Method	QSAR		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Toxicity to Daphnia (chronic)

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
NOEC		9,48	mg/l
Duration of exposure		16	day(s)
Species	Daphnia magna		
Method	QSAR		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Toxicity to algae (acute)

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
EC50	appr.	47,8	mg/l
Duration of exposure		96	h
Species	Algae		
Method	QSAR		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

Toxicity to algae (chronic)

No data available

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Region:
GER**Bacteria toxicity**

No data available

12.2 Persistence and degradability**Biodegradability**

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
Source		ECHA	
Evaluation		not readily biodegradable	

12.3 Bioaccumulative potential**Partition coefficient n-octanol/water (log value)**

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
log Pow		1,13	
Reference temperature		25	°C
with reference to		pH 7	
Method		QSAR	
Source		ECHA	

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment**Results of PBT and vPvB assessment****Product Name**

R152a

PBT assessment	The product is not considered to be a PBT.
vPvB assessment	The product is not considered to be a vPvB.
Source	supplier

No	Substance name	CAS no.	EC no.
1	1,1-difluoroethane	75-37-6	200-866-1
PBT assessment		The substance is not PBT.	
vPvB assessment		The substance is not vPvB.	
Source		ECHA	

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects**Other adverse effects**

Global warming potential: 124
May contribute to the greenhouse effect in larger quantities in the case of a gas emanation.

12.8 Other information**Other information**

Do not discharge into drains or waters and do not dispose of in public landfills.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product**

dispose of in accordance with local regulation.
Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Packaging

Compressed gas packaging under pressure. Do not open by force. Do not heat above 50°C. Dispose of compressed gas packagings only if completely discharged. Do not burn empty compressed gas packagings. Do not pierce, cut or weld uncleaned containers.

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Region:
GER**SECTION 14: Transport information****14.1 UN number or ID number**

ADR/RID/ADN	UN1030
IMDG	UN1030
ICAO-TI / IATA	UN1030

14.2 UN proper shipping name

ADR/RID/ADN	1,1-DIFLUOROETHANE (GAS AS REFRIGERANT R152a)
IMDG	1,1-DIFLUOROETHANE (GAS AS REFRIGERANT R152a)
ICAO-TI / IATA	1,1-Difluoroethane

14.3 Transport hazard class(es)

ADR/RID/ADN - Class	2
Label	2.1 RID: (+13)
Classification code	2F
Tunnel restriction code	B/D
Hazard identification no.	23
IMDG - Class	2.1
Label	2.1
ICAO-TI / IATA - Class	2.1
Label	2.1

14.4 Packing group

ADR/RID/ADN	-
IMDG	-
ICAO-TI / IATA	-

14.5 Environmental hazards

EmS	F-D, S-U
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14.6 Special precautions for user

To be transported always in closed, upright and safe containers. Make sure that persons handling these containers are aware of the rules of conduct in case of incident or spillage.

14.7 Maritime transport in bulk according to IMO instruments

Not relevant

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulations****Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

In accordance with the REACH regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES

The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.	No 40
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Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is subject to Part I of Annex I, risk category:	P2
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Other regulations

REGULATION (EU) No 2024/573 on fluorinated greenhouse gases
Adhere to the national sanitary and occupational safety regulations when using this product.

National regulations**Water Hazard Class (Germany)**

Class	1
Identification number	4198
Source	Classification according to AwSV (Regulation on facilities for handling substances that are hazardous to water).

Other regulations

Take into account: TRGS 510 "Storage of hazardous substances in non-stationary containers"

15.2 Chemical safety assessment

A chemical safety assessment has been carried out for this substance.

SECTION 16: Other information**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:

Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP

Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

Notes relating to the identification, classification and labelling of substances and mixtures ((EC) No 1272/2008, Annex VI)

U	When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case.
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Creation of the safety data sheet

UMCO GmbH

This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.

This document is an English translation of the legally compliant safety data sheet of the region Germany. This document, including UFI and emergency telephone number, may only be used for placing on the market in the region Germany.

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