

Trade name: R 407F

Current version: 2.0.0, Revision: 29.06.2026

Replaced version: 1.0.0, Revision: 30.07.2025

Region:
GER

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

1.1 Product identifier

Trade name

R 407F

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

Relevant identified uses of the substance or mixture

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

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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)

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, 4 and 5 of Annex I to CLP.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Hazard pictograms



GHS04

Signal word

Warning

Hazard statement(s)

H280

Contains gas under pressure; may explode if heated.

Precautionary statement(s)

P410+P403

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

Supplemental label elements

Contains fluorinated greenhouse gases.

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. Vapours are heavier than air and can cause asphyxiation by displacing the oxygen in the air. 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**

Not applicable. The product is not a substance.

3.2 Mixtures**Hazardous ingredients**

No	Substance name	Additional information	
	CAS / EC / Index / REACH no	Classification (EC) 1272/2008 (CLP)	Concentration %
1	norflurane		
	811-97-2 212-377-0 - 01-2119459374-33	Press. Gas liq.; H280	40,00 Vol%
2	pentafluoroethane		
	354-33-6 206-557-8 - 01-2119485636-25	Press. Gas liq.; H280	30,00 Vol%
3	difluoromethane		
	75-10-5 200-839-4 - 01-2119471312-47	Flam. Gas 1B; H221 Press. Gas liq.; H280	30,00 Vol%

Full text of H- and EUH-phrases, if not already mentioned in section 2.2: see section 16.

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

Remove soiled or soaked clothing immediately. Adhere to personal protective measures when giving first aid.

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

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Rinse the mouth thoroughly with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor. Unlikely route of exposure.

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

Gas reduces oxygen available for breathing. Contact with liquid or refrigerated gas can cause cold burns and frostbite.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Do not administer adrenaline or derivatives.

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

Alcohol resistant foam, CO₂, powders, water spray; Extinguishing measures to suit surroundings.

Unsuitable extinguishing media

High power water jet

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; 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**

Remove persons to safety. Provide good room ventilation even at ground level (vapours are heavier than air). Use personal protective clothing. Do not breathe gas. Avoid skin contact with leaking liquid (danger of frostbite!).

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. 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.

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

Advice on protection against fire and explosion

The product is not combustible. The substance can form a combustible mixture with air at elevated pressure. Isolate from sources of heat, sparks and open flame. Take precautionary measures against electrostatic loading (earthing necessary during loading operations). 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.

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

Substances to be avoided, see section 10.

Stoarge 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****Occupational exposure limit values**

No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
	TRGS 900		
	Norfluran		
	WEL long-term (8-hr TWA reference period)	4200	mg/m ³ 1000 ml/m ³
	Ceiling Limit	8(II)	
	Notes	Y	

Biological limit values

No	Substance name
1	pentafluoroethane
	TRGS 903
	Fluorwasserstoff und anorganische Fluorverbindungen (Fluoride)
	parameter Fluorid
	Value 7,0 mg/g Kreatinin
	sample material U
	Sampling moment b
	TRGS 903
	Fluorwasserstoff und anorganische Fluorverbindungen (Fluoride)
	parameter Fluorid
	Value 4,0 mg/g Kreatinin
	sample material U
	Sampling moment d

DNEL, DMEL and PNEC values**DNEL values (worker)**

No	Substance name	CAS / EC no
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	Route of exposure	Exposure time	Effect	Value
1	norflurane			811-97-2 212-377-0
	inhalative	Long term (chronic)	systemic	13936 mg/m ³
2	pentafluoroethane			354-33-6 206-557-8
	inhalative	Long term (chronic)	systemic	16444 mg/m ³
3	difluoromethane			75-10-5 200-839-4
	inhalative	Long term (chronic)	systemic	7035 mg/m ³

DNEL value (consumer)

No	Substance name			CAS / EC no
	Route of exposure	Exposure time	Effect	Value
1	norflurane			811-97-2 212-377-0
	inhalative	Long term (chronic)	systemic	2476 mg/m ³
2	pentafluoroethane			354-33-6 206-557-8
	inhalative	Long term (chronic)	systemic	1753 mg/m ³
3	difluoromethane			75-10-5 200-839-4
	inhalative	Long term (chronic)	systemic	750 mg/m ³

PNEC values

No	Substance name			CAS / EC no
	ecological compartment	Type		Value
1	norflurane			811-97-2 212-377-0
	water	fresh water		0,1 mg/L
	water	marine water		0,01 mg/L
	water	fresh water sediment		0,75 mg/kg dry weight
	sewage treatment plant	-		73 mg/L
2	pentafluoroethane			354-33-6 206-557-8
	water	fresh water		0,1 mg/L
	water	fresh water sediment		0,6 mg/kg dry weight
3	difluoromethane			75-10-5 200-839-4
	water	fresh water		0,313 mg/L
	water	fresh water sediment		1,807 mg/kg dry weight

8.2 Exposure controls**Appropriate engineering controls**

Ensure adequate ventilation, local exhaust at the work station if necessary.

Personal protective equipment**Respiratory protection**

Self-contained breathing apparatus. In case of insufficient ventilation or long-term effect use breathing apparatus.
Danger of suffocation due to high concentrations in breathing air.

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. Protective shoes.

Environmental exposure controls

No data available.

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

State of aggregation	
gas	
Form	
clear	
Colour	
colourless	
Odour	
characteristic	
pH value	
Not applicable	
reason for missing pH	substance/mixture is a gas
Source	supplier
Boiling point / boiling range	
Value	-45,5 °C
Reference pressure	1013 hPa
Source	supplier
Melting point/freezing point	
No data available	
Decomposition temperature	
No data available	
Flash point	
Not applicable	
Source	supplier
Ignition temperature	
No data available	
Flammability	
The product is non-flammable.	
Source	supplier
Lower explosion limit	
none	
Source	supplier
Upper explosion limit	
none	
Source	supplier

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Vapour pressure			
Value	10218	hPa	
Reference temperature	21,1	°C	
Source	supplier		

Relative vapour density	
No data available	

Relative density	
No data available	

Density	
No data available	

Solubility	
No data available	

Partition coefficient n-octanol/water (log value)			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
log Pow		1,06	
Reference temperature		25	°C
with reference to		pH 6.0	
Method		OECD 107	
Source		ECHA	
2	pentafluoroethane	354-33-6	206-557-8
log Pow		1,48	
Reference temperature		25	°C
with reference to		pH 6.34	
Method		OECD 107	
Source		ECHA	
3	difluoromethane	75-10-5	200-839-4
log Pow		0,21	
Reference temperature		25	°C
with reference to		pH 6,1	
Method		OECD 107	
Source		ECHA	

Kinematic viscosity	
No data available	

Particle characteristics	
Not applicable	
Source	supplier

9.2 Other information

Other information	
No data available.	

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

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

10.4 Conditions to avoid

Temperatures > 50°C. Heat, naked flames and other ignition sources. Contact with incompatible substances.

10.5 Incompatible materials

Oxidizing agents; Metal as powder; Possible incompatibility with alkali-sensitive substances.

10.6 Hazardous decomposition products

None if stored, handled and transported properly. In case of fire: see section 5.

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	norflurane	811-97-2	212-377-0
LC50	>	567000	ppmV
Duration of exposure		4	h
State of aggregation	Gas		
Species	rat		
Method	OECD 403		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	pentafluoroethane	354-33-6	206-557-8
LC50	>	800000	ppmV
Duration of exposure		4	h
State of aggregation	Gas		
Species	rat		
Method	OECD 403		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
3	difluoromethane	75-10-5	200-839-4
LC50	>	520000	ppmV
Duration of exposure		4	h
State of aggregation	Gas		
Species	rat		
Method	OECD 403		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
Duration of exposure		24	h
Species	rabbit		
Source	ECHA		
Evaluation	low-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		
Serious eye damage/irritation			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
Species	guinea pig		
Source	ECHA		
Evaluation	non-irritant		
Evaluation/classification	Based on available data, the classification criteria are not met.		
Respiratory or skin sensitisation			

No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
Route of exposure		Skin	
Species		guinea pig	
Source		ECHA	
Evaluation		non-sensitizing	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
Type of examination		in vitro gene mutation study in bacteria	
Species		Salmonella typh. TA98, TA100, TA1535, TA1537, TA1538	
Method		OECD 471	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
Type of examination		in vitro chromosome 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		In vivo mammalian somatic cell study: cytogenicity / erythrocyte micronucleus	
Species		mouse	
Method		EPA	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
2	pentafluoroethane	354-33-6	206-557-8
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		Chinese hamster Ovary (CHO)	
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		mouse	
Method		OECD 474	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
3	difluoromethane	75-10-5	200-839-4
Type of examination		in vitro gene mutation study in bacteria	
Species		Salmonella typhimurium: TA 1535, TA 1537, TA 98, TA 100; Escherichia coli WP2 uvrA	
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	
Duration of exposure		6	h

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Type of examination	In vivo mammalian somatic cell study: cytogenicity / erythrocyte micronucleus
Species	mouse
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	norflurane	811-97-2	212-377-0
Route of exposure		inhalational	
NOEL		>> 50000	ppm
Species		mouse	
Method		OECD 478	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
2	pentafluoroethane	354-33-6	206-557-8
Route of exposure		inhalational	
NOAEL		>= 50000	ppm
Type of examination		Prenatal Developmental Toxicity Study	
Species		rabbit	
Method		OECD 414	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
3	difluoromethane	75-10-5	200-839-4
Route of exposure		inhalational	
NOAEL		50000	ppm
Type of examination		Prenatal Developmental Toxicity Study	
Species		rabbit	
Method		OECD 414	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	

Carcinogenicity			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
Route of exposure		inhalational	
NOEL		10000	ppm
Type of examination		Toxicity study	
Species		rat	
Method		OECD 453	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
2	difluoromethane	75-10-5	200-839-4
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	norflurane	811-97-2	212-377-0
Route of exposure		inhalational	
Species		rat	
Method		OECD 453	
Source		ECHA	
Evaluation/classification		Based on available data, the classification criteria are not met.	
2	pentafluoroethane	354-33-6	206-557-8
Route of exposure		inhalational	

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Species	rat
Method	OECD 413
Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.
3 difluoromethane	75-10-5 200-839-4
Route of exposure	inhalational
NOAEL	49100 ppm
Duration of exposure	13 week/s
Species	rat
Method	OECD 413
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**Endocrine disrupting properties**

No data available

Other information

Inhalation: May cause cardiac arrhythmia.

SECTION 12: Ecological information**12.1 Toxicity**

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
LC50		450	mg/l
Duration of exposure		96	h
Species	Oncorhynchus mykiss (rainbow trout)		
Method	EU C.1		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	difluoromethane	75-10-5	200-839-4
LC50		1731	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 data available

Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
EC50		980	mg/l
Duration of exposure		48	h
Species	Daphnia magna		
Method	EU C.2		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		
2	difluoromethane	75-10-5	200-839-4
EC50		833	mg/l
Duration of exposure		48	h
Species	Daphnia		
Method	QSAR		

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Source	ECHA
Evaluation/classification	Based on available data, the classification criteria are not met.

Toxicity to Daphnia (chronic)

No data available

Toxicity to algae (acute)

No	Substance name	CAS no.	EC no.
1	difluoromethane	75-10-5	200-839-4
EC50		313	mg/l
Duration of exposure		72	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

Bacteria toxicity

No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
EC50	>	730	mg/l
Duration of exposure		6	h
Species	Pseudomonas putida		
Source	ECHA		
Evaluation/classification	Based on available data, the classification criteria are not met.		

12.2 Persistence and degradability**Biodegradability**

No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
Type	aerobic biodegradation		
Value	appr.	3	%
Duration		28	d
Method	OECD 301 D		
Source	ECHA		
Evaluation	not readily biodegradable		
2	pentafluoroethane	354-33-6	206-557-8
Type	aerobic biodegradation		
Value	appr.	5	%
Duration		28	d
Method	Closed Bottle Test (OECD 301D)		
Source	ECHA		
Evaluation	not readily biodegradable		
3	difluoromethane	75-10-5	200-839-4
Type	aerobic biodegradation		
Value		5	%
Duration		28	d
Method	OECD 301 D		
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	norflurane	811-97-2	212-377-0
log Pow		1,06	
Reference temperature		25	°C
with reference to	pH 6.0		

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Method		OECD 107	
Source		ECHA	
2	pentafluoroethane	354-33-6	206-557-8
log Pow		1,48	
Reference temperature		25	°C
with reference to			
Method	pH 6.34		
Source	OECD 107		
	ECHA		
3	difluoromethane	75-10-5	200-839-4
log Pow		0,21	
Reference temperature		25	°C
with reference to			
Method	pH 6,1		
Source	OECD 107		
	ECHA		

12.4 Mobility in soil

Results of PMT and vPvM assessment			
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
PMT assessment	The substance is not PMT.		
vPvM assessment	The substance is not vPvM.		
Source	ECHA		
2	pentafluoroethane	354-33-6	206-557-8
PMT assessment	The substance is not PMT.		
vPvM assessment	The substance is not vPvM.		
Source	ECHA		
3	difluoromethane	75-10-5	200-839-4
PMT assessment	The substance is not PMT.		
vPvM assessment	The substance is not vPvM.		
Source	ECHA		

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment			
Product Name			
R 407F			
PBT assessment	The product is not considered to be a PBT.		
vPvB assessment	The product is not considered to be a vPvB.		
No	Substance name	CAS no.	EC no.
1	norflurane	811-97-2	212-377-0
PBT assessment	The substance is not PBT.		
vPvB assessment	The substance is not vPvB.		
Source	ECHA		
2	pentafluoroethane	354-33-6	206-557-8
PBT assessment	The substance is not PBT.		
vPvB assessment	The substance is not vPvB.		
Source	ECHA		
3	difluoromethane	75-10-5	200-839-4
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 (GWP): 1825

SECTION 13: Disposal considerations

13.1 Waste treatment methods**Product**

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

Packaging

Containers must be completely emptied and disposed of in accordance with the legal requirements. Containers that have not been emptied must be taken to the disposal site after consultation with the disposal company.

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

ADR/RID/ADN	UN3163
IMDG	UN3163
ICAO-TI / IATA	UN3163

14.2 UN proper shipping name

ADR/RID/ADN	LIQUEFIED GAS, N.O.S.
Technical name	norflurane pentafluoroethane
IMDG	LIQUEFIED GAS, N.O.S.
Technical name	norflurane pentafluoroethane
ICAO-TI / IATA	Liquefied gas, n.o.s.
Technical name	norflurane pentafluoroethane

14.3 Transport hazard class(es)

ADR/RID/ADN - Class	2
Label	2.2 RID: (+13)
Classification code	2A
Tunnel restriction code	C/E
Hazard identification no.	20
IMDG - Class	2.2
Label	2.2
ICAO-TI / IATA - Class	2.2
Label	2.2

14.4 Packing group

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

14.5 Environmental hazards

EmS	F-C, S-V
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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)

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances considered as substances requiring authorisation as listed on Annex XIV of the REACH regulation (EC) 1907/2006.

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

According to available data and the information provided by preliminary suppliers, the product does not contain substances that are considered substances meeting the criteria for inclusion in annex XIV (List of Substances Subject to Authorisation) as laid down in Article 57 and article 59 of REACH (EC) 1907/2006.

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

According to the data available and/or specifications supplied by upstream suppliers, this product does not contain any substances subject to restriction as listed in Annex XVII of the REACH regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This product is not subject to Part 1 or 2 of Annex I.

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

Source

Classification according to AwSV (Regulation on facilities for handling substances that are hazardous to water).

Other regulations

REGULATION (EU) No. 517/2014 on fluorinated greenhouse gases; 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 one or more of the substances within this mixture.

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.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H221

Flammable gas.

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, 4 and 5 of Annex I to CLP.

Creation of the safety data sheet

UMCO GmbH

Trade name: R 407F

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Region:
GER

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.

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