R-507A
Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Revision date: 03/01/2018 Supersedes: 29/07/2015 Version: 8.0

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

1.1. Product identifier

Product form : Mixture

Name : R-507A

Product code : 100050700

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Refrigerant

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier
Dehon Service SA
26 Avenue du Petit Parc
94683 VINCENNES Cedex - France
T 01 43 98 75 00 - F 01 43 98 21 51
ContactFDS@climalife.dehon.com

Other
Climalife Hongrie Kft
Rét u. 2
2040 Budaörs - Hungary
T 00 36 23 431 660 - F 00 36 23 431 661
ContactFDS@climalife.dehon.com

Other
Climalife Kft Budepesta sucurcala Bucuresti Romania
Bulevardul Hristo Botev, Nr. 28,
Bucuresti Sectorul 3 - Romania
ContactFDS@climalife.dehon.com

Other
Climalife Supplied by Inventec Performance Chemicals Italia SRL
Via del Lavoro, 10/G
20874 Busnago MB - Italia
T +39 39-5973480 - F +39 39-5973490
ContactFDS@climalife.dehon.com

Other
Dehon Kälte-Fachvertriebs GmbH
Robert-Bosch-Strasse 14
40668 MEERBUSCH - Germany
T 00 49 2150 7073 0 - F 00 49 2150 7073 17
ContactFDS@climalife.dehon.com

Other
Dehon nordic service
Östra Hamngatan 50B 3tr
41109 GÖTEBORG - Sweden
T 00 46 44 21 58 80 - F 00 46 44 21 58 80
ContactFDS@climalife.dehon.com

Other
Dehon Service Belgium s.a/n.v.
Avenue Carton de Wiart, 79
1090 Bruxelles - Belgium
T 00 32 2 421 01 70 - F 00 32 2 426 96 62
ContactFDS@climalife.dehon.com

Other
Dehon Service Nerderland B.V.
Van Konijnenburgweg 84
NL-4612 PL Bergen Op Zoom - Netherlands
T 00 31 164 212 830 - F 00 31 164 212 831
ContactFDS@climalife.dehon.com

Other
Friogas sa
Poligono Industrial SEPES
46500 SAGUNTO (Valencia) - Spain
T 00 34 9 6 266 36 32 - F 00 34 9 6 266 50 25
ContactFDS@climalife.dehon.com

Other
IDS Refrigeration Limited
Green Court, Kings Weston Lane
BS11 8AZ Bristol - United Kingdom
T 00 44 1179 802520 - F 00 44 1179 802521
ContactFDS@climalife.dehon.com

Other
Prochimac SA
Rue du Château 10
CH-2000 NEUCHATEL - Switzerland
T 00 41 32 727 36 00 - F 00 41 32 727 36 19
ContactFDS@climalife.dehon.com

1.4. Emergency telephone number

Emergency number : +33 (0) 1 72 11 00 03

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital, Guy's & St Thomas' Hospital Trust	Dudley Road B18 7QH Birmingham	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Liquefied gas H280

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Contact with the liquid may cause frostbite and serious damage to eyes.

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS04

Signal word (CLP) : Warning

Hazard statements (CLP) : H280 - Contains gas under pressure; may explode if heated

Precautionary statements (CLP) : P410+P403 - Protect from sunlight. Store in a well-ventilated place

Extra phrases : Greenhouse fluorinated gas falling within Kyoto Protocol (GWP=3985)

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
1,1,1-Trifluoroethane	(CAS No) 420-46-2 (EC no) 206-996-5 (REACH-no) 01-2119492869-13	50	Flam. Gas 1, H220 Liquefied gas, H280
Pentafluoroethane substance with a Community workplace exposure limit	(CAS No) 354-33-6 (EC no) 206-557-8 (REACH-no) 01-2119485636-25	50	Liquefied gas, H280

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. If you feel unwell, seek medical advice.

First-aid measures after skin contact : In the event of contact with the liquid: treat resulting frostbite as a burn. Immediately remove contaminated clothing or footwear. Immediately rinse with plenty of water. If skin burns appear, call a doctor immediately.

First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Consult an eye specialist immediately.

First-aid measures after ingestion : Not specifically applicable (gas).

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

Symptoms/injuries : CNS depression. Narcosis. Cardiac disorders. Lack of oxygen: risk of death.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : All extinguishing agents can be used.

Unsuitable extinguishing media : None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture

Explosion hazard : pressure rise and possible bursting of container. On heating : Toxic and corrosive vapours are released.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers.

Protection during firefighting : Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin and eyes. Remove all sources of ignition. Do not smoke. Evacuate the danger area. Do not breathe smoke. Stop the leak.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

Other information : Mechanically ventilate the spillage area.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing mist, vapours. Do not get in eyes, on skin, or on clothing. Ventilation. Vapours are heavier than air and may spread along floors. Under certain temperature and pressure conditions may form a flammable mixture in the presence of air.

Hygiene measures : Do not drink, eat or smoke in the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store : in a cool, well-ventilated area, away from any source of heat, away from any source of ignition.

Incompatible materials : Strong oxidizing agents. Alkaline hydroxide. Alkaline earth metals. Finely divided metals (Al, Mg, Zn).

Packaging materials : Recommended materials: Stainless steel, Carbon steel. Do not use : Alloys containing more than 2% magnesium, Plastic materials.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

R-507A		
Australia	Local name	1,1,1,2-Tetrafluoroethane
Australia	TWA (mg/m³)	4240 mg/m³
Australia	TWA (ppm)	1000 ppm

Pentafluoroethane (354-33-6)		
EU	IOELV TWA (mg/m³)	4900 mg/m³ (recommended)
EU	IOELV TWA (ppm)	1000 ppm (recommended)

1,1,1-Trifluoroethane (420-46-2)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, inhalation	38800 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects, inhalation	10700 mg/m³
PNEC (Water)	
PNEC aqua (freshwater)	0,35 mg/l

Pentafluoroethane (354-33-6)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, inhalation	16444 mg/m³
DNEL/DMEL (General population)	
Long-term - systemic effects, inhalation	1753 mg/m³
PNEC (Water)	

Pentafluoroethane (354-33-6)	
PNEC aqua (freshwater)	0,1 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0,6 mg/kg dwt

8.2. Exposure controls

Hand protection:

Leather protective gloves. Nitrile-rubber protective gloves. VITON gloves

Eye protection:

Safety glasses with side shields

Skin and body protection:

Majority cotton protective clothing

Respiratory protection:

In the event of insufficient ventilation: Gas mask with filter type AX. In a confined area : Self-contained breathing apparatus

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Gas
Appearance	:	Liquefied gas.
Colour	:	Colourless.
Odour	:	slightly ethereal.
Odour threshold	:	No data available
pH	:	Not applicable
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	-47,1 °C
Flash point	:	None
Critical temperature	:	71 °C
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	Non flammable
Vapour pressure	:	12,9 bar (25°C)
Vapour pressure at 50 °C	:	23,7 bar (50°C)
Critical pressure	:	37,2 bar
Relative vapour density at 20 °C	:	5,52
Relative density	:	No data available
Density	:	1,042 g/cm³ (25°C)
Solubility	:	Insoluble in water.
Log Pow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	Not explosive material according to EC criteria.
Oxidising properties	:	Non oxidizing material according to EC criteria.
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Decomposes on exposure to temperature rise.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

No information available. No polymerization.

10.4. Conditions to avoid

Avoid high temperatures. Avoid naked flame. Heating will cause a rise in pressure with a risk of bursting.

10.5. Incompatible materials

Alkalis and caustic products. alkali metals. Alkaline earth metals. Finely divided metals (Al, Mg, Zn). Strong oxidizing agents.

10.6. Hazardous decomposition products

On thermal decomposition (pyrolysis), releases : Hydrogen fluoride, Carbon oxides (CO, CO2), Fluorinated hydrocarbons, Carbonyl halogenides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

1,1,1-Trifluoroethane (420-46-2)	
LC50 inhalation rat (ppm)	591000 ppm/4h

Pentafluoroethane (354-33-6)	
LC50 inhalation rat (ppm)	800000 ppm/4h

Skin corrosion/irritation : Not classified
pH: Not applicable

Additional information : Contact with the liquid causes frostbite

Serious eye damage/irritation : Not classified
pH: Not applicable

Additional information : Contact with the liquefied gas may cause severe ocular lesions

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

1,1,1-Trifluoroethane (420-46-2)	
LC50 fish 1	> 40 mg/l Oncorhynchus mykiss (Rainbow trout)
LC50 fish 2	109 mg/l (freshwater)
EC50 Daphnia 1	115 - 300 mg/l 48 Hours (Daphnia magna)
EC50 96h algae (1)	71 mg/l
NOEC chronic algae	> 44 mg/l selenastrum capricornutum

Pentafluoroethane (354-33-6)	
LC50 fish 1	> 100 mg/l 96 Hours (Oncorhynchus mykiss)
EC50 Daphnia 1	> 100 mg/l 48 Hours (Daphnia magna)
EC50 72h algae (1)	> 114 mg/l 72 Hours (Pseudokirchneriella subcapitata)

12.2. Persistence and degradability

1,1,1-Trifluoroethane (420-46-2)	
Persistence and degradability	3 % biodegradation after 28 days.

Pentafluoroethane (354-33-6)	
Persistence and degradability	5 % biodegradation after 28 days.

12.3. Bioaccumulative potential

1,1,1-Trifluoroethane (420-46-2)	
Log Pow	1,73

Pentafluoroethane (354-33-6)	
Log Pow	1,48

12.4. Mobility in soil

Pentafluoroethane (354-33-6)	
Log Koc	1,3 - 1,7

12.5. Results of PBT and vPvB assessment

Component	
1,1,1-Trifluoroethane (420-46-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
Pentafluoroethane (354-33-6)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : Ozone depletion factor ODP (R-11=1) = 0. Total global warming potential (GWP) : 3985.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Switzerland : OTD : RS 814.600 / OMoD : RS 814.610.

Waste disposal recommendations : Methods of disposal of packaging. Reuse or recycle following decontamination. Destroy at an authorised site.

Additional information : The user's attention is drawn to the possible existence of specific european, national or local regulations regarding disposal.

SECTION 14: Transport information

In accordance with ADR / IATA / IMDG

ADR	IMDG	IATA
14.1. UN number		
3163	3163	3163
14.2. UN proper shipping name		
LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane ; Pentafluoroethane)	LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane ; Pentafluoroethane)	Liquefied gas, n.o.s. (1,1,1-Trifluoroethane ; Pentafluoroethane)
Transport document description		
UN 3163 LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane ; Pentafluoroethane), 2.2, (C/E)	UN 3163 LIQUEFIED GAS, N.O.S. (1,1,1-Trifluoroethane ; Pentafluoroethane), 2.2	UN 3163 Liquefied gas, n.o.s. (1,1,1-Trifluoroethane ; Pentafluoroethane), 2.2
14.3. Transport hazard class(es)		
2.2	2.2	2.2
		
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : 2A

Special provisions (ADR) : 274, 662

Limited quantities (ADR) : 120ml

Excepted quantities (ADR) : E1

Packing instructions (ADR) : P200

Mixed packing provisions (ADR) : MP9

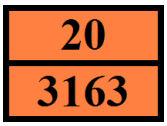
Portable tank and bulk container instructions (ADR) : (M), T50

Tank code (ADR) : PxBN(M)

Tank special provisions (ADR) : TA4, TT9

Vehicle for tank carriage : AT

Transport category (ADR) : 3

Special provisions for carriage - Loading, unloading and handling (ADR)	:	CV9, CV10, CV36
Hazard identification number (Kemler No.)	:	20
Orange plates	:	
Tunnel restriction code (ADR)	:	C/E
EAC code	:	2TE

- Transport by sea

Special provisions (IMDG)	:	274
Limited quantities (IMDG)	:	120 ml
Excepted quantities (IMDG)	:	E1
Packing instructions (IMDG)	:	P200
Tank instructions (IMDG)	:	T50
EmS-No. (Fire)	:	F-C
EmS-No. (Spillage)	:	S-V
Stowage category (IMDG)	:	A

- Air transport

PCA Excepted quantities (IATA)	:	E1
PCA Limited quantities (IATA)	:	Forbidden
PCA limited quantity max net quantity (IATA)	:	Forbidden
PCA packing instructions (IATA)	:	200
PCA max net quantity (IATA)	:	75kg
CAO packing instructions (IATA)	:	200
CAO max net quantity (IATA)	:	150kg
ERG code (IATA)	:	2L

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Other information, restriction and prohibition regulations	:	* Regulation (EC) No 517/2014 : Greenhouse fluorinated gas falling within Kyoto Protocol.

15.1.2. National regulations

Ensure all national/local regulations are observed

Germany

VwVwS Annex reference	:	Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 3)
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV	:	Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen	:	None of the components are listed
SZW-lijst van mutagene stoffen	:	None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	:	None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	:	None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	:	None of the components are listed

Switzerland

Recommendations Swiss Regulation : ORRChim RS 814.81.

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes:
All chapters have been modified since the previous version.

Other information : For more information regarding the use of this product, please refer to our technical information or contact the sales department in your region.

Full text of H- and EUH-statements:

Flam. Gas 1	Flammable gases, Category 1
Liquefied gas	Gases under pressure : Liquefied gas
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product