

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

1.1. Product identifier

Product form	: Substance
Name	: R-1233zd
Chemical name	: Trans-1-chloro-3,3,3-trifluoropropene
EC-No.	: 700-486-0
CAS-No.	: 102687-65-0
REACH registration No.	: 01-2119855084-38
Product code	: 101123300

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

Relevant identified uses

Use of the substance/mixture	: Refrigerant
	Foam blowing agent
	Solvent

1.3. Details of the supplier of the safety data sheet

Supplier

Dehon Service SAS
 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 Kft Budepesta sucursală Bucuresti Romania
 Bulevardul Hristo Botev, Nr. 28,
 Biroul NR 4, Modulul I
 Bucuresti Sectorul 3
 Romania
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 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

Friogas sa
 Poligono Industrial SEPES
 Parcela 10
 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

Prochimac SA
 ZI Petits Champs 15

Other

Climalife Hongrie Kft.
 Villányi út 47
 1118 Budapest
 Hungary
 T (36) 23 431 660
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 nordic service
 Östra Hamngatan 50B 3tr
 41109 GÖTEBORG
 Sweden
 T 00 46 735 01 90 50
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

IDS Refrigeration Limited
 22 Apex Court, Woodlands, Bradley Stoke
 BS32 4JT Bristol
 United Kingdom
 T 00 44 1179 802520, F 00 44 1179 802521
ContactFDS@climalife.dehon.com

Other

Galco s.a/n.v.
 Avenue Carton de Wiart, 79

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CH-1400 Yverdon-les-Bains
Switzerland
T 00 41 32 727 36 00, F 00 41 32 727 36 19
ContactFDS@climalife.dehon.com

Other
Climalife Asia Corporation
Room 302-A82, No.3, Building 1509, Xin Zhen Road,
201101 Shanghai, Minhang District
China
T +86 21 6442 3972, F +86 21 6442 3952
ContactFDS@climalife.dehon.com

Other
Teknaly Middle East FZCO
B34BS33O203, Jebel Ali Freezone
Dubai
United Arab Emirates
ContactFDS@climalife.dehon.com

1090 BRUSSELS
Belgium
T 00 32 2 421 01 84, F 00 32 2 421 01 84 / 00 32 2 425 38 12
ContactFDS@climalife.dehon.com

Other
Galco Singapore Branch
135 Cecil Street #10-01
Singapore
ContactFDS@climalife.dehon.com

1.4. Emergency telephone number

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

Country/Area	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals- 24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Press. Gas (Liq.) H280
Aquatic Chronic 3 H412
Full text of hazard classes, H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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.
H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements (CLP) : P273 - Avoid release to the environment.
P403 - Store in a well-ventilated place.
Extra phrases : Greenhouse fluorinated gas falling within Kyoto Protocol (GWP = 3,88).

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2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : R-1233zd
CAS-No. : 102687-65-0
EC-No. : 700-486-0

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Trans-1-chloro-3,3,3-trifluoropropene	CAS-No.: 102687-65-0 EC-No.: 700-486-0 REACH-no: 01-2119855084-38	100	Press. Gas (Liq.), H280 Aquatic Chronic 3, H412

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove victim to fresh air. Artificial respiration and/or oxygen if necessary. Call a physician immediately.

First-aid measures after skin contact : After contact with skin, wash immediately and thoroughly with plenty of water. Immediately remove contaminated clothing or footwear. Wash contaminated clothing before reuse. Call a physician immediately.

First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.

First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

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

No additional information available

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 : Water spray. Foam. Dry powder. Carbon dioxide.
Unsuitable extinguishing media : Strong water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Heating will cause a rise in pressure with a risk of bursting. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Reactivity in case of fire : Toxic and corrosive vapours may be released.

5.3. Advice for firefighters

Precautionary measures fire : Cool down the containers exposed to heat with a water spray.
Protection during firefighting : Complete protective clothing. Self-contained breathing apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate personnel to a safe area. Only qualified personnel equipped with suitable protective equipment may intervene. Ensure adequate ventilation.

No additional information available

6.2. Environmental precautions

Avoid release to the environment. Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

For containment : Dike and contain spill. Liquid spill: take up in dry sand/earth/vermiculite. Place in an appropriate container and dispose of the contaminated material at a licensed site.

6.4. Reference to other sections

For disposal of solid materials or residues refer to section 13 : "Disposal considerations". 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 : Ensure adequate ventilation, especially in confined areas. Do not breathe vapour/aerosol. Remove all sources of ignition.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : acids. Store away from direct sunlight or other heat sources.

7.3. Specific end use(s)

For use in industrial installations or professional treatment only.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

EU - Indicative Occupational Exposure Limit (IOEL)

IOEL TWA	800 ppm (recommended)
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DNEL and PNEC

Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

DNEL/DMEL (Workers)

Long-term - systemic effects, inhalation	1779 mg/m ³
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DNEL/DMEL (General population)

Long-term - systemic effects, oral	109 mg/kg bodyweight/day
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Long-term - systemic effects, inhalation	379 mg/m ³
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Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

PNEC (Water)

PNEC aqua (freshwater)	0.038 mg/l
PNEC aqua (marine water)	0.0038 mg/l
PNEC aqua (intermittent, freshwater)	0.38 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	0.691 mg/kg dwt
PNEC sediment (marine water)	0.0691 mg/kg dwt

PNEC (Soil)

PNEC soil	0.126 mg/kg dwt
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8.2. Exposure controls

Personal protection equipment

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Safety glasses

Skin protection

Skin and body protection:

safety foot-wear

Hand protection:

VITON gloves

Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Gas mask with filter type AX

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gas
Colour	: Colourless.
Appearance	: Press. Gas (Liq.).
Molecular mass	: 130.5 g/mol
Odour	: Not available
Odour threshold	: Not available
Melting point	: < -90 °C
Freezing point	: Not applicable
Boiling point	: 18.26 °C
Flammability	: Non flammable.
Explosive properties	: Not explosive.
Oxidising properties	: Non oxidizing.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not applicable
Auto-ignition temperature	: 380 °C (986,9 - 1035,9 hPa)
Decomposition temperature	: Not available

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pH	: Not applicable
Viscosity, kinematic	: Not applicable
Solubility	: Water: 1.9 g/l (20°C)
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: 2.2 (25°C)
Vapour pressure	: 1065 hPa (20°C)
Vapour pressure at 50°C	: 1516 hPa (30°C)
Critical pressure	: 36.24 bar
Density	: Not applicable
Relative density	: 1.27
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

Information with regard to physical hazard classes

Critical temperature : 166.45 °C

Other safety characteristics

VOC content : 100 %

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions.

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Polymerisation can occur.

10.4. Conditions to avoid

Heating will cause a rise in pressure with a risk of bursting. Keep away from heat and direct sunlight.

10.5. Incompatible materials

Acids. Strong oxidizing agents. Finely divided aluminium. Magnesium.

10.6. Hazardous decomposition products

Thermal decomposition may produce : Carbon oxides (CO, CO₂). Hydrogen chloride. Hydrogen fluoride.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

LC50 Inhalation - Rat [ppm]	120000 ppm Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), 95% CL: 108500 - 133800
Skin corrosion/irritation	: Not irritating to rabbits on cutaneous application. (OECD 404 method)
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: No sensitizing effect known
Germ cell mutagenicity	: Mutagenicity tests are negative
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

LOAEC (inhalation, rat, gas, 90 days)	4000 ppm Animal: rat, Animal sex: male, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
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Aspiration hazard : Not applicable

11.2. Information on other hazards

Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

LC50 - Fish [1]	≈ 38 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	82 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 215 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
NOEC chronic algae	115 mg/l

12.2. Persistence and degradability

R-1233zd (102687-65-0)

Persistence and degradability	Not established.
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Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

Persistence and degradability	0 % biodegradation after 28 days, Not readily biodegradable, (OECD 301D method).
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12.3. Bioaccumulative potential

R-1233zd (102687-65-0)

Partition coefficient n-octanol/water (Log Pow)	2.2 (25°C)
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Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

Partition coefficient n-octanol/water (Log Pow)	2.2
Partition coefficient n-octanol/water (Log Kow)	≥ 2.2

12.4. Mobility in soil

Trans-1-chloro-3,3,3-trifluoropropene (102687-65-0)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.16
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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

12.7. Other adverse effects

Other adverse effects : ODP (R-11=1)=0.
Additional information : GWP (CO2=1/100 years) = 3,88





SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Refer to manufacturer or supplier for information on recovery or recycling.
Additional information : Reuse or recycle following decontamination. Destroy at an authorised site.
Ecological waste information : Must not be discharged to atmosphere. Refer to manufacturer or supplier for information on recovery or recycling.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / RID

ADR	IMDG	IATA	RID
14.1. UN number or ID number			
UN 3163	UN 3163	UN 3163	UN 3163
14.2. UN proper shipping name			
LIQUEFIED GAS, N.O.S. (Trans-1-chloro-3,3,3-trifluoropropene)	LIQUEFIED GAS, N.O.S. (Trans-1-chloro-3,3,3-trifluoropropene)	Liquefied gas, n.o.s. (Trans-1-chloro-3,3,3-trifluoropropene)	LIQUEFIED GAS, N.O.S. (Trans-1-chloro-3,3,3-trifluoropropene)
Transport document description			
UN 3163 LIQUEFIED GAS, N.O.S. (Trans-1-chloro-3,3,3-trifluoropropene), 2.2, (C/E)	UN 3163 LIQUEFIED GAS, N.O.S. (Trans-1-chloro-3,3,3-trifluoropropene), 2.2	UN 3163 Liquefied gas, n.o.s. (Trans-1-chloro-3,3,3-trifluoropropene), 2.2	UN 3163 LIQUEFIED GAS, N.O.S. (Trans-1-chloro-3,3,3-trifluoropropene), 2.2
14.3. Transport hazard class(es)			
2.2	2.2	2.2	2.2
			
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No EmS-No. (Fire): F-C EmS-No. (Spillage): S-V	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available			

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14.6. Special precautions for user

Overland transport

Classification code (ADR)	: 2A
Special provisions (ADR)	: 274, 662
Limited quantities (ADR)	: 120ml
Tank code (ADR)	: PxBN(M)
Transport category (ADR)	: 3
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
Flash point (IMDG)	: Not applicable.

Air transport

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

Rail transport

Special provisions (RID)	: 274, 662
Limited quantities (RID)	: 120ml
Tank codes for RID tanks (RID)	: PxBN(M)
Transport category (RID)	: 3
Colis express (express parcels) (RID)	: CE3
Hazard identification number (RID)	: 20

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

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Council Regulation (EC) for the control of dual-use items

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

VOC Directive (2004/42)

VOC content : 100 %

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

15.2. Chemical safety assessment

Not applicable.

SECTION 16: Other information

Indication of changes		
Section	Changed item	Comments
	Supersedes	Modified
	Issue date	Added
	Revision date	Modified
	Adverse health effects caused by endocrine disrupting properties	Added
1.2	Main use category	Modified
2.2	Extra phrases	Added
2.2	Precautionary statements (CLP)	Modified
9	Critical pressure	Added
9	Boiling point	Modified
9	VOC content	Added
9.1	Critical temperature	Added
12.2	Persistence and degradability	Added
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added
12.7	Other adverse effects	Added

Full text of H- and EUH-statements:

Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
H280	Contains gas under pressure; may explode if heated.
H412	Harmful to aquatic life with long lasting effects.
Press. Gas (Liq.)	Gases under pressure : Liquefied gas

Safety Data Sheet (SDS), EU

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.