



R-23

TRIFLUOROMETHANE – CHF₃

GUARANTEED COMMERCIAL SPECIFICATIONS

STANDARD SPECIFICATIONS	LIMIT VALUE
Purity	≥ 99.5 % weight
Water content	≤ 10 ppm weight
Non-condensable content (gas phase)	≤ 1.5 % volume
High-boiling residues	≤ 0.01 % volume
Total acidity (HCl)	≤ 1 ppm weight

MAIN APPLICATIONS

R-23 is a "hydrofluorocarbon" (HFC) intended for very low temperatures (-60 to -100°C) applications with reciprocating or rotary compressors.

It is used for the second stage in a cascade refrigeration system, the first stage may be operating with R-448A or R-407F, which are replacement fluids for R-404A and R-507A (climatic test chamber, freeze-dry system).

OILS

Use a polyol ester (POE) oil.

Check with **Climalife** regarding the viscosity of the oil selected for your application, and the miscibility with the fluid under consideration.

PRECAUTIONS OF USE

Refer to the Safety Data Sheet*.

REGULATION

Use, implementation and recovery are governed by European regulation no. 2024/573.

It is also important to refer to the regulations in force in each country in Europe and outside Europe.

*Find Safety Data Sheets (SDS) directly on our website www.climalife.com

R-23 PHYSICAL PROPERTIES

Molar mass	g/mol	70.01
Melting point	°C	-155.2
Boiling point (at 1.013 bar)	°C	-82.0
Density of the saturated liquid at 25°C	kg/m ³	680
Steam density at boiling point	kg/m ³	4662
Vapour pressure at 25°C	bar	46.99
Critical temperature	°C	26.14
Critical pressure	bar	48.32
Critical density	kg/m ³	527
Latent heat of vaporisation at boiling point	kJ/kg	239.37
Thermal conductivity of liquid at 25°C	W/(m.K)	0.053
Thermal conductivity of vapour under 1.013 bar	W/(m.K)	0.014
Surface tension at 25°C	10 ⁻³ N/m	0.04
Viscosity of liquid at 25°C	10 ⁻³ Pa-s	0.044
Viscosity of vapour at 1.013 bar		0.015
Specific heat of liquid at 25°C	kJ/(kg.K)	18.871
Specific heat of vapour at 1.013		0.737
Cp/Cv ratio at -10°C at 1.013 bar		1.201
Flammability in air		non-flammable
Flash point		none
Classification NF-EN 378 / ASHRAE PE(S)R		A1 Category 2
Ozone Depletion Potential	(R-11=1)	0
GWP according to Regulation (EU) 2024/573 (F-Gas III)		14800
GWP (AR4 / AR6)	(CO ₂ = 1)	14800 / 14600

Please contact your distributor or our **Climalife** sales department for more information. In addition, if the refrigeration system you want to install, or are working on, does not appear to be a typical installation, please do not hesitate to contact us for advice and information.

The information contained in this product sheet is the result of our studies and experience. It is provided in good faith, but should not, under any circumstance, be taken to constitute a guarantee on our part or an assumption of our responsibility. This is particularly the case when third party rights are at stake or in situations where a user of one of our products fails to observe applicable regulations.



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