



VIN-FP-206/007

# climalife®

## R-744

CO<sub>2</sub>

### GUARANTEED COMMERCIAL SPECIFICATIONS

STANDARD SPECIFICATIONS	LIMIT VALUE
Purity	≥ 99.99 % weight
Water content	≤ 10 ppm weight
Condensable content (gas phase)	N/A

### MAIN APPLICATIONS

R-744 (carbon dioxide) is a refrigerant designed for industrial and commercial refrigeration applications. It can be used in direct expansion systems, in cascade refrigeration (sub-critical) with HFC or NH<sub>3</sub> or HFO booster systems (trans-critical).

### OILS

CO<sub>2</sub> has its own behaviour characteristics with oils, particularly in terms of miscibility and solubility. The selection of oils should be made depending on the application or system and those specified by the compressor manufacturer. Specialist Polyolester miscible oils (POE), polyalphaolefin (PAO) and polyalkylene glycol (PAG) immiscible oils are available. 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\*.

\*Find the Safety Data Sheet (SDS) directly on our website [www.climalife.dehon.com](http://www.climalife.dehon.com)



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## PHYSICAL PROPERTIES OF R-744

Molar mass	g/mol	44.01
Melting point	°C	-56.55
Sublimation temperature (at 1 atm)	°C	-78.46
Saturated fluid density at 25°C	kg/m <sup>3</sup>	710.5
Vapour pressure at 25°C	bar	64.34
Critical temperature	°C	30.97
Critical pressure	bar	73.77
Critical density	kg/m <sup>3</sup>	467.6
Thermal conductivity of liquid at 25°C	W/m.K	0.0807
Thermal conductivity of vapour at 1.013 bar	W/m.K	0.0166
Surface tension at 30°C	N/m	0.00055
Solubility of fluid in water at 1.013 bar and 25°C	% weight	0.015
Solubility of water in the fluid at 20°C	% weight	0.2
Viscosity of liquid at 30°C	10 <sup>-3</sup> Pa.s	0.044
Specific heat of liquid at 30°C	kJ/(kg.K)	35.33
Specific heat of vapour at 1 atm	kJ/(kg.K)	0.855
Cp/Cv ratio at 25°C and 1.013 bar		1.294
Flammability in air		Non-flammable
Flash point		None
ASHRAE classification		A1
Ozone Depletion Potential		0
GWP		1

Please contact your distributor or **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.

For more information, please visit our website:



[http://www.climalife.dehon.com/contact\\_us](http://www.climalife.dehon.com/contact_us)