

RS-51(R470B) PHYSICAL PROPERTIES

		RS-51 ₍₂₎	R404A ₍₂₎
Molecular Mass		89.73	97.60
Boiling point (1 atm) (1)	°C	-61.45	-46.23
	°F	-78.6	-51.2
Temperature glide	K	4.1 ⁽⁴⁾	0.5
Critical Temperature	°C	94.29	72.12
	°F	201.7	161.8
Critical Pressure	bara	54.66	37.35
	psia	792.8	541.7
Liquid Density (25 °C) (1)	kg/m ³	1107	1044
Density of saturated vapour (25 °C) (1)	kg/m ³	56.74	66.41
Latent Heat of Vaporisation at boiling point (3)	kJ/kg	259.9	200.9
Heat capacity constant volume Cv (25 °C & 1bara)	kJ/kg.K	0.762	0.784
Heat capacity constant pressure Cp (25 °C & 1bara)	kJ/kg.K	0.862	0.877
Cp/Cv (25 °C & 1 bara)		1.131	1.118
Vapour Pressure (25 °C) (1)	bara	17.07	12.55
	psia	247.7	182.0
Vapour Viscosity (25 °C & 1 bara)	cP	0.0129	0.0121
Liquid Viscosity (25 °C) (1)	cP	0.143	0.128
Liquid Thermal Conductivity (25 °C)	W/m.K	0.0812	0.0627
Surface Tension (25 °C) (1)	N/m	0.00642	0.00446
Specific heat of liquid (25 °C) (1)	kJ/kg.K	1.54	1.54
Ozone Depletion Potential	ODP	0	0
Global warming potential AR5	GWP	717	3943
Flammability limit in air (1 atm)	vol%	none	none
Inhalation exposure (8 hour day & 40 hour week)	ppm	1000	1000

(1) Bubble Point

(2) RS-51 refrigerant properties obtained from NIST's REFPROP v10 program.

(3) Difference between bubble point liquid enthalpy and dew point vapour enthalpy at 1 atm.

(4) Pressure drop in the evaporator of 0.5 bar.