

General Characteristics

Product		R32	R410A	HCFC-22
Component		HFC-32	HFC-32/ HFC-125	HCFC-22
Chemical formula		CH ₂ F ₂	CH ₂ F ₂ / CHF ₂ CF ₃	CHClF ₂
Composition	mass%	100	50/50	100
Molar mass		52.0	72.6	86.5
Boiling point		-51.7	-51.4	-40.8
Freezing point		-136	-	-160
Critical temperature		78.1	72.0	96.2
Critical pressure	MPa	5.78	4.95	4.99
Critical density	kg/m ³	424	486	515
Density Saturated liquid	kg/m ³	961	1059	1191
Density Saturated vapor	kg/m ³	47.34	64.87	44.23
Viscosity Saturated liquid	mPa·s	0.116	0.121	0.178
Viscosity Normal pressure vapor	mPa·s	0.0126	0.0129	0.0128
Isobaric specific heat Saturated liquid	kJ/kg·K	1.937	1.711	1.256
Isobaric specific heat Normal pressure vapor	kJ/kg·K	0.848	0.818	0.662
Latent heat of vaporization (Boiling Point)	kJ/kg	382	275	233
Thermal conductivity Saturated liquid	mW/m·K	125	87	87
Thermal conductivity Normal pressure vapor	mW/m·K	13	13	11
Breakdown voltage Normal pressure vapor	kV	2.8	4.8	7.2
Dielectric constant Saturated liquid		14.27	7.88	6.35
Acceptable concentration limit	ppm	1000 ^{*2}	1000 ^{*3}	1000 ^{*4}
Ozone depletion potential ODP	CFC11=1	0	0	0.055
Global warming potential GWP *1	CO ₂ =1	675	2088	1810
Solubility of water	massppm	3400	1600	1300

Unless otherwise specified, the values in the above table are at 25°C.

*1 Global Warming Potential: Based on IPCC 4th Assessment Report 2007, integration time horizon 100 years. For blends, figures calculated on its basis.

*2 WEEL-TWA value of AIHA (Workplace Environmental Exposure Level; Time-Weighted Average; American Industrial Hygiene Association)

*3 Calculated value based on the WEEL-TWA value of AIHA of each component.

*4 TLV-TWA value of ACGIH (Threshold limit value; Association Advancing Occupational and Environmental Health).