RS-20 PHYSICAL PROPERTIES

		RS-20(1)	R134a
Molecular Mass		108.2	102.0
Boiling point (1 atm) (2)	^{0}C ^{0}F	-34.09 -29.37	-26.07 -14.93
Temperature Glide (3)	K	4.5	0
Critical Temperature	^{0}C ^{0}F	107.40 225.3	101.1 213.9
Critical Pressure	bara psia	43.51 631.1	40.059 581.0
Liquid Density (25 ^{0}C) (4)	kg/m^3	1175	1207
Density of saturated vapour (25 ^{0}C) (1)	kg/m^3	28.27	32.35
Latent Heat of Vaporisation at boiling point (5)	kJ/kg	229.4	217.0
Cv (25 ^{0}C & 1bara)	kJ/kg.K	0.7947	0.7602
Cp (25 ^{0}C & 1bara)	kJ/kg.K	0.8791	0.8510
Cp/Cv (25 ^{0}C & 1 bara)		1.106	1.119
Vapour Pressure (25 ^{0}C) (4)	bara psia	7.517 109	6.654 96.50
Vapour Viscosity (25 ^{0}C and 1 bara)	cP	0.01229	0.01182
Liquid Viscosity (25 ^{0}C) (1)	cP	1.860	1.949
Liquid Thermal Conductivity (25 ^{0}C)	W/m.K	0.07484	0.08113
Surface Tension (25 ^{0}C) (4)	N/m	0.008518	0.008031
Specific heat of liquid (25 ^{0}C) (4)	kJ/kg.K	1.391	1.425
Ozone Depletion Potential	ODP	0	0
Flammability limit in air (1 atm)	vol%	n/a	n/a
Inhalation exposure (8 hour day & 40 hour week)	ppm	1000	1000
GWP		293	1300

(1) RS-20 refrigerant properties obtained from NIST's REFPROP program.

(2) Boiling point at 1 atm (mean of bubble and dew points).

(3) Typical evaporator temperature glide from a Rankine cycle calculation. Midpoints:

45 ^{0}C condensing, 7 ^{0}C evaporating with 0.5 bar pressure drop; compressor isentropic efficiency: 0.7.

(4) Mean of bubble and dew points at 25 ^{0}C . Property calculations on the midpoint liquid and vapour phase compositions as appropriate.

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