Asahiklin AK-134a basic physical properties

Item	R-134a	R-22	R-502
Component	-	-	R-22/R-115 48.8/51.2wt%
Chemical Formula	CF_3CH_2F	$CHClF_2$	$CHClF_2/CF_3CClF_2$
Molecular weight [kg/kmol]	102	86.5	111.6
Critical Temperature [°C]	101.1	96.1	82.2
Critical Pressure [MPa]	4.059	4.9	4.065
Freezing Point [°C]	-101	-160	-160
Boiling Temparature (101.325kPa) [°C]	-26.1	-40.8	-45.3
Dew Point Temperature (101.325kPa) [°C]	-26.1	-40.8	-45
Boiling Point Pressure (25°C) [kPa]	665	1,044	1,159
Dew Point Pressure (25°C) [kPa]	665	1,044	1,158
Density (25°C, saturated liquid) [kg/m^3]	1207	1,191	1,213
Density (25°C, saturated steam) [kg/m^3]	32.4	44.2	66.6
Latent heat of evaporation (25°C) [kJ/kg]	177.8	182.7	127.6
Specific heat ratio (25°C, 101.325kPa) [-]	1.119	1.185	1.131
Thermal conductivity (25°C, saturated liquid)[mW/(m・K)]	81.1	83.7	62.9
Thermal conductivity (25°C, saturated steam)[mW/(m・K)]	13.8	11.4	12
Viscosity (25°C, saturated liquid) [μPa・s]	197.9	165.8	142.5
Viscosity (25°C, saturated steam) [μPa・s]	11.8	12.7	13
Surface tension (25°C) [mN/m]	8.1	8.1	5.5
Solubility in water (25°C,101.325kPa) [%]	0.15	0.3	
Solubility with water refrigerant (25°C) [%]	0.1	0.13	0.056
Dielectric strength (N2=1) (25°C,101.325kPa) [-]	0.8	1.27	2.34
Dielectric constant (saturated liquid)	9.24	6.11	3.863
Dielectric constant (40°C,0.1MPa) [-]	1.0113	1.0045	1.009 (20°C, 50kPa)
Ozone Depletion Potential (CFC-11=1) [-]	0	0.055	0.334
Global Warming Potential* (CO_2=1) [-]	1430	1810	4660
Atmospheric lifetime [years]	14.6	13.3	-
Ignition range [vol%]	None	None	None
ASHRAE SSPC34 Safety Classification	A1	A1	A1
Allowable concentration**[ppm]	1,000(3)	1,000(1)	1,000(2)
Azeotropic point [°C]	-	-	18.9
Existing chemical substance number	2-3585	2-93	2-93 2-87
CAS NO	811-97-2	75-45-6	75-45-6 76-15-3
TSCA	Finished input	Finished input	Finished input
EINECS NO	2123770	2008719	2008719 2009382

* IPCC4 Assessment Report 2007

** Allowable concentration: (1) Japan Society for Occupational Health recommended value, (2) ACGIH's TLV-TWA value, (3) AIHA's WEEL-TWA value