



R-507

Technical Guidelines

Physical Properties of Refrigerants	R-507
Environmental Classification	HFC
Molecular Weight	98.9
Boiling Point (1 atm, °F)	-52.8
Critical Pressure (psia)	539
Critical Temperature (°F)	159
Critical Density, (lb./ft ³)	30.7
Liquid Density (70 °F, lb./ft ³)	66.65
Vapor Density (bp, lb./ft ³)	0.349
Heat of Vaporization (bp, BTU/lb.)	84.35
Specific Heat Liquid (70 °F, BTU/lb. °F)	0.3593
Specific Heat Vapor (1 atm, 70 °F, BTU/lb. °F)	0.2064
Ozone Depletion Potential (CFC 11 = 1.0)	0
Global Warming Potential (CO ₂ = 1.0)	3985
ASHRAE Standard 34 Safety Rating	A1

Available in the following sizes

R-507
 25 LB. CYLINDER
 100 LB. CYLINDER
 800 LB. CYLINDER
 1400 LB. CYLINDER

Pressure-Temp Chart

Temp (°F)	R-507 (psig)
-40	5.5
-35	8.2
-30	11.1
-25	14.3
-20	17.8
-15	21.7
-10	25.8
-5	30.3
0	35.2
5	40.5
10	46.1
15	52.2
20	58.8
25	65.8
30	73.3
35	81.3
40	89.8
45	98.9
50	109
55	119
60	130
65	141
70	154
75	167
80	180
85	195
90	210
95	226
100	244
105	252
110	281
115	301
120	322
125	344
130	368
135	393
140	419
145	446
150	475

R-507 (R-125/143a)
(50 / 50 wt%)

Applications: Medium and low temperature commercial refrigeration and industrial refrigeration

Performance:

- Similar to R-404A in operation
- Pressure and capacity are slightly higher than R-404A

Lubricant

Recommendation: Compatible with polyolester lubricant



THERMODYNAMIC PROPERTIES OF R-507

<u>Temp</u>	<u>Pressure</u>	<u>Pressure</u>	<u>Density</u>	<u>Density</u>	<u>Enthalpy</u>	<u>Enthalpy</u>	<u>Entropy</u>	<u>Entropy</u>
[°F]	Liquid [psia]	Vapor [psia]	Liquid [lb/ft ³]	Vapor [lb/ft ³]	Liquid [Btu/lb]	Vapor [Btu/lb]	Liquid [Btu/R-lb]	Vapor [Btu/R-lb]
-60	12.1	12.1	83.10	0.2899	-5.871	79.54	-0.01429	0.1994
-55	13.9	13.9	82.57	0.3298	-4.416	80.26	-0.01068	0.1986
-50	15.8	15.8	82.03	0.3738	-2.952	80.98	-0.00709	0.1978
-45	18.0	18.0	81.49	0.4223	-1.480	81.69	-0.00354	0.1970
-40	20.4	20.4	80.94	0.4756	0.000	82.40	0.00000	0.1964
-35	23.1	23.1	80.39	0.5340	1.489	83.11	0.00351	0.1957
-30	26.0	26.0	79.83	0.5980	2.987	83.81	0.00700	0.1951
-25	29.2	29.2	79.27	0.6678	4.494	84.51	0.01047	0.1946
-20	32.7	32.7	78.70	0.7439	6.010	85.20	0.01392	0.1940
-15	36.5	36.5	78.12	0.8267	7.537	85.88	0.01735	0.1935
-10	40.7	40.7	77.53	0.9166	9.073	86.56	0.02077	0.1931
-5	45.2	45.2	76.94	1.014	10.62	87.23	0.02417	0.1927
0	50.1	50.0	76.34	1.120	12.18	87.89	0.02755	0.1923
5	55.3	55.3	75.73	1.234	13.75	88.55	0.03091	0.1919
10	61.0	60.9	75.11	1.357	15.33	89.19	0.03427	0.1915
15	67.1	67.0	74.48	1.491	16.92	89.83	0.03761	0.1912
20	73.6	73.6	73.84	1.634	18.52	90.45	0.04094	0.1909
25	80.6	80.6	73.18	1.789	20.14	91.07	0.04426	0.1906
30	88.1	88.1	72.52	1.956	21.77	91.67	0.04757	0.1903
35	96.1	96.1	71.84	2.136	23.42	92.26	0.05087	0.1900
40	104.7	104.6	71.15	2.329	25.08	92.84	0.05417	0.1898
45	113.8	113.7	70.45	2.537	26.76	93.40	0.05746	0.1895
50	123.5	123.4	69.73	2.761	28.45	93.94	0.06075	0.1892
55	133.8	133.7	68.99	3.002	30.17	94.47	0.06404	0.1890
60	144.7	144.6	68.23	3.262	31.90	94.97	0.06733	0.1887
65	156.3	156.1	67.45	3.541	33.65	95.46	0.07062	0.1884
70	168.5	168.3	66.65	3.843	35.42	95.92	0.07392	0.1882
75	181.5	181.3	65.82	4.169	37.21	96.36	0.07722	0.1879
80	195.1	194.9	64.97	4.521	39.03	96.77	0.08053	0.1875
85	209.6	209.4	64.08	4.902	40.87	97.15	0.08386	0.1872
90	224.8	224.6	63.17	5.315	42.75	97.50	0.08720	0.1868
95	240.8	240.6	62.21	5.764	44.65	97.80	0.09056	0.1864
100	257.7	257.5	61.21	6.255	46.59	98.07	0.09395	0.1859
105	275.5	275.2	60.17	6.792	48.57	98.28	0.09737	0.1854
110	294.2	293.9	59.07	7.382	50.59	98.43	0.1008	0.1848
115	313.8	313.5	57.91	8.035	52.66	98.52	0.1043	0.1842
120	334.4	334.1	56.67	8.762	54.79	98.53	0.1079	0.1834
125	356.1	355.8	55.34	9.580	56.98	98.44	0.1116	0.1825
130	378.8	378.6	53.89	10.51	59.26	98.24	0.1153	0.1814
135	402.7	402.5	52.29	11.59	61.64	97.87	0.1192	0.1801
140	427.9	427.6	50.50	12.86	64.17	97.30	0.1233	0.1785