



R-1234ze

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Composition: 100% CHF=CH-CF3

Application:

Air conditioning chillers. The A2L safety rating implies slight flammability — this may affect locations where it can be used

Performance:

New equipment containing R-1234ze will perform as designed

Lubricant:

Polyolester can be used for chiller applications

Retrofitting:

- Best for air conditioning chillers, can be used for other self contained applications to replace 134a (in newly built equipment)

[PRESSURE-TEMP CHART]

TEMP. (°F)	R-1234ze psig
-40	19.1
-35	17.3
-30	15.5
-25	13.2
-20	11.0
-15	8.1
-10	5.3
-5	2.0
0	0.8
5	2.7
10	4.8
15	7.2
20	9.7
25	12.5
30	15.4
35	18.7
40	22.2
45	26.0
50	30.0
55	34.4
60	39.1
65	44.1
70	49.5
75	55.2
80	61.3
85	67.8
90	74.7
95	82.1
100	89.9
105	98.2
110	107

[PHYSICAL PROPERTIES OF REFRIGERANTS]

	National R-1234ze
Environmental Classification	HFO
Molecular Weight	114
Boiling Point (1atm, °F)	-2.1
Critical Pressure (psia)	527.36
Critical Temperature (°F)	228.9
Critical Density (lb./ft ³)	30.53
Liquid Density (20°F, lb./ft ³)	80.72
Vapor Density (bp, lb./ft ³)	0.357
Heat of Vaporization (bp, BTU/lb.)	84
Specific Heat Liquid (20°F, BTU/lb. °F)	0.330
Specific Heat Vapor (1atm, 20°F, BTU/lb. °F)	.0235
Ozone Depletion Potential (CFC 11 = 1.0)	0
Global Warming Potential (CO2 = 1.0)	6
ASHRAE Standard 34 Safety Rating	A2L

[AVAILABLE IN SIZES]

REFRIGERANT	Type	Size
R-1234ze	Cylinder	25 lb.
		110 lb.



Thermodynamic Properties of R-1234ze

TEMP. (°F)	Pressure (psia)	Density Liquid (lb/ft ³)	Density Vapor (lb/ft ³)	Enthalpy Liquid (Btu/lb)	Enthalpy Vapor (Btu/lb)	Entropy Liquid (Btu/R-lb)	Entropy Vapor (Btu/R-lb)
-40	5.3	84.25	0.140	0.000	89.12	0.0000	0.2123
-35	6.2	83.79	0.160	1.500	89.97	0.0035	0.2118
-30	7.1	83.34	0.180	3.000	90.82	0.0070	0.2114
-25	8.2	82.88	0.210	4.510	91.68	0.0105	0.2110
-20	9.3	82.42	0.230	6.020	92.53	0.0140	0.2107
-15	10.7	81.96	0.260	7.540	93.38	0.0174	0.2104
-10	12.1	81.49	0.300	9.060	94.23	0.0208	0.2102
-5	13.7	81.02	0.330	10.59	95.08	0.0241	0.2100
0	15.5	80.55	0.370	12.12	95.92	0.0275	0.2098
5	17.4	80.07	0.420	13.66	96.77	0.0308	0.2097
10	19.5	79.59	0.470	15.20	97.61	0.0341	0.2096
15	21.9	79.11	0.520	16.75	98.44	0.0374	0.2095
20	24.4	78.61	0.580	18.31	99.28	0.0406	0.2094
25	27.2	78.12	0.640	19.87	100.1	0.0439	0.2094
30	30.1	77.62	0.700	21.44	100.9	0.0471	0.2094
35	33.4	77.11	0.780	23.02	101.8	0.0503	0.2094
40	36.9	76.60	0.850	24.61	102.6	0.0534	0.2094
45	40.7	76.08	0.940	26.20	103.4	0.0566	0.2095
50	44.7	75.56	1.03	27.80	104.2	0.0597	0.2096
55	49.1	75.03	1.12	29.41	105.0	0.0628	0.2096
60	53.8	74.49	1.23	31.03	105.8	0.0660	0.2097
65	58.8	73.95	1.34	32.66	106.5	0.0690	0.2098
70	64.2	73.40	1.46	34.30	107.3	0.0721	0.2100
75	69.9	72.83	1.59	35.94	108.1	0.0752	0.2101
80	76.0	72.27	1.73	37.60	108.8	0.0783	0.2102
85	82.5	71.69	1.87	39.27	109.6	0.0813	0.2104
90	89.4	71.10	2.03	40.95	110.3	0.0843	0.2105
95	96.8	70.50	2.20	42.64	111.0	0.0874	0.2106
100	105	69.89	2.38	44.35	111.7	0.0904	0.2108
105	113	69.26	2.58	46.07	112.4	0.0934	0.2109
110	122	68.63	2.78	47.80	113.1	0.0964	0.2110
115	131	67.97	3.01	49.54	113.8	0.0994	0.2112
120	141	67.31	3.24	51.31	114.4	0.1024	0.2113
125	151	66.62	3.50	53.08	115.0	0.1054	0.2114
130	162	65.92	3.77	54.88	115.6	0.1084	0.2115
135	173	65.20	4.06	56.69	116.2	0.1115	0.2115
140	185	64.46	4.37	58.52	116.8	0.1145	0.2116
145	198	63.69	4.71	60.38	117.3	0.1175	0.2116
150	211	62.90	5.07	62.25	117.8	0.1205	0.2116