

Refrigerant R-407A

Non-flammable,
non-ozone depleting
replacement for
R404A/R507A and R-22 in
refrigeration applications.

Overview

Daikin R-407A is characterized by low toxicity, higher efficiency, and excellent thermal stability. Consider also Daikin Creard R-407H which provides an even higher efficiency solution for similar applications at a GWP of 1380.

R-407A is mainly used as a refrigerant for low temperature and medium temperature commercial refrigeration.

R-407A falls under US EPA SNAP and is currently scheduled as no longer acceptable for certain end uses in the U.S. for new and retrofit equipment; such as stand-alone refrigeration. R-407A is unrestricted for service and maintenance purposes. Please refer to US EPA SNAP for most up to date rulings and decisions (<https://www.epa.gov/snap>).

	R-407A	R-404A	R-22
Composition	R-32/125/134a (20/40/40 mass%)	R-125/143a/134a (44/52/4 mass%)	R-22 (100 mass%)
Liquid Density (at 77°F)	71.5 lbm/ft ³	65.2 lbm/ft ³	74.3 lbm/ft ³
Vapor Density (at 77°F)	3.1 lbm/ft ³	4.1 lbm/ft ³	2.8 lbm/ft ³
Boiling Point (at 1atm)	-49.9°F	-48.5°F	-41.5°F
Critical Temperature	180.1°F	161.8°F	205.1°F
Critical Pressure	654.7 psi	541.7 psi	723.7 psi
Saturated Vapor Pressure (at 77°F)	158.6 psi	180.0 psi	151.4 psi
Ozone Depletion Potential (ODP)*	0	0	0.055
Global Warming Potential (GWP)**	2110 / 1920	3920 / 3940	1810 / 1760
Temperature Glide (Evaporation)***	11.3°F (LT) 10.4°F (MT)	1.2°F (LT) 0.9°F (MT)	0°F
ASHRAE Classification Refrigerant Type	Class A1 Zeotropic Blend	Class A1 Zeotropic Blend	Class A1
Appearance	Colorless	Colorless	Colorless
Flammability	Nonflammable	Nonflammable	Nonflammable

* Montreal Protocol reporting values

** IPCC Fourth Assessment Report / Fifth Assessment Report

*** Evaporator MT condition 20°F; LT Condition -25°F

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Pressure Temperature Chart

Temp (°F)	R-407A			R-404A			R-22
	Bubble Pressure (psig)	Dew Pressure (psig)	Average Pressure (psig)	Bubble Pressure (psig)	Dew Pressure (psig)	Average Pressure (psig)	Bubble/ Dew Pressure (psig)
-40	3.9	-1.0	1.5	4.9	4.3	4.6	0.6
-35	6.4	1.0	3.7	7.5	6.8	7.2	2.6
-30	9.2	3.3	6.2	10.3	9.6	10.0	4.9
-25	12.2	5.8	9.0	13.4	12.7	13.1	7.4
-20	15.6	8.5	12.0	16.8	16.0	16.4	10.2
-15	19.2	11.5	15.4	20.5	19.7	20.1	13.2
-10	23.2	14.9	19.0	24.6	23.6	24.1	16.5
-5	27.5	18.5	23.0	28.9	27.9	28.4	20.1
0	32.2	22.5	27.4	33.7	32.6	33.1	24.0
5	37.3	26.9	32.1	38.8	37.7	38.2	28.3
10	42.8	31.6	37.2	44.3	43.1	43.7	32.8
15	48.7	36.7	42.7	50.2	49.0	49.6	37.8
20	55.1	42.3	48.7	56.6	55.3	55.9	43.1
25	62.0	48.3	55.2	63.4	62.1	62.7	48.8
30	69.3	54.8	62.1	70.7	69.3	70.0	55.0
35	77.2	61.8	69.5	78.6	77.1	77.8	61.5
40	85.6	69.4	77.5	86.9	85.4	86.1	68.6
45	94.6	77.4	86.0	95.8	94.2	95.0	76.1
50	104.2	86.1	95.1	105.3	103.6	104.4	84.1
55	114.4	95.3	104.8	115.3	113.6	114.5	92.6
60	125.2	105.2	115.2	126.0	124.2	125.1	101.6
65	136.7	115.7	126.2	137.3	135.5	136.4	111.2
70	148.8	127.0	137.9	149.3	147.4	148.4	121.4
75	161.7	138.9	150.3	162.0	160.1	161.0	132.2
80	175.3	151.6	163.4	175.4	173.4	174.4	143.6
85	189.7	165.1	177.4	189.5	187.5	188.5	155.7
90	204.8	179.3	192.1	204.5	202.4	203.4	168.4
95	220.8	194.4	207.6	220.2	218.1	219.1	181.8
100	237.6	210.4	224.0	236.8	234.6	235.7	195.9
105	255.3	227.4	241.4	254.2	252.1	253.1	210.8
110	273.9	245.2	259.6	272.5	270.4	271.4	226.4
115	293.5	264.1	278.8	291.8	289.6	290.7	242.8
120	314.0	284.0	299.0	312.1	309.9	311.0	260.0
125	335.4	305.0	320.2	333.3	331.2	332.2	278.0
130	357.9	327.1	342.5	355.6	353.5	354.6	296.9
135	381.5	350.5	366.0	379.1	377.0	378.1	316.7
140	406.2	375.1	390.6	403.7	401.7	402.7	337.4
145	431.9	401.0	416.5	429.6	427.7	428.6	359.0
150	458.9	428.3	443.6	456.8	455.1	455.9	381.7

Handling Method and Safety Information

R-407A is a liquefied high-pressure gas. Please refer to the Safety Data Sheet (SDS) before use.

Packaging Specifications

R-407A is available in 25lb disposable and 100lb returnable containers.

Compatibility Information

R-407A is compatible with most existing HFC system components. Specifically, existing polyol ester lubricants (POE), filter dryers, gaskets, elastomers, and plastics. Please contact the component manufacturers for specific recommendations.

Additional Information

Additional field trial, retrofit guides and technical data are available upon request and at www.daikin-america.com.