

Refrigerant blends

Number ^a	Chemical Name ^a	Safety Group ^a	Global Warming Potential (GWP100 ^b)	Bubble Point °F	Dew Point °F	Bubble Point °C	Dew Point °C
Zeotropes							
407F	R-32/125/134a (30.0/30.0/40.0)	A1	1800	-51.0	-39.5	-46.1	-39.7
407G	R-32/125/134a (2.5/2.5/95.0)	A1	N/A ^c	-20.6	-17.0	-29.2	-27.2
407H	R-32/125/134a (32.5/15.0/52.5)	A1	N/A ^c	-48.5	-35.7	-44.7	-37.6
417B	R-125/134a/600 (79.0/18.3/2.7)	A1	3000	-48.8	-42.7	-44.9	-41.5
417C	R-125/134a/600 (19.5/78.8/1.7)	A1	N/A ^c	-26.9	-20.6	-32.7	-29.2
419B	R-125/134a/E170 (48.5/48.0/3.5)	A2	N/A ^c	-35.3	-24.7	-37.4	-31.5
422E	R-125/134a/600a (58.0/39.3/2.7)	A1	N/A ^c	-43.2	-33.5	-41.8	-36.4
439A	R-32/125/600a (50.0/47.0/3.0)	A2	2000	-61.6	-61.2	-52.0	-51.8
440A	R-290/134a/152a (0.6/1.6/97.8)	A2	150	-13.9	-11.7	-25.5	-24.3
441A	R-170/290/600a/600 (3.1/54.8/6.0/36.1)	A3	~20	-43.4	-4.7	-41.9	-20.4
442A	R-32/125/134a/152a/227ea (31.0/31.0/30.0/3.0/5.0)	A1	1900	-51.7	-39.8	-46.5	-39.9
443A	R-1270/290/600a (55.0/40.0/5.0)	A3	N/A ^c	-48.6	-42.2	-44.8	-41.2
444A	R-32/152a/1234ze(E) (12.0/5.0/83.0)	A2L	N/A ^c	-29.7	-11.7	-34.3	-24.3
444B	R-32/152a/1234ze(E) (41.5/10.0/48.5)	A2L	N/A ^c	-48.3	-30.8	-44.6	-34.9
445A	R-744/134a/1234ze(E) (6.0/9.0/85.0)	A2L	N/A ^c	-58.5	-10.3	-50.3	-23.5
446A	R-32/1234ze(E)/600 (68.0/29.0/3.0)	A2L	N/A ^c	-56.9	-47.2	-49.4	-44.0
447A	R-32/125/1234ze(E) (68.0/3.5/28.5)	A2L	N/A ^c	-56.7	-47.6	-49.3	-44.2
447B	R-32/125/1234ze(E) (68.0/8.0/24.0)	A2L	N/A ^c	-58.2	-50.8	-50.1	-46.0
448A	R-32/125/1234yf/134a/1234ze(E) (26.0/26.0/20.0/21.0/7.0)	A1	N/A ^c	-50.6	-39.6	-45.9	-39.8
449A	R-32/125/1234yf/134a (24.3/24.7/25.3/25.7)	A1	N/A ^c	-50.8	-39.8	-46.0	-39.9
449B	R-32/125/1234yf/134a (25.2/24.3/23.2/27.3)	A1	N/A ^c	-51.0	-40.4	-46.1	-40.2
499C	R-32/125/1234yf/134a (20.0/20.0/31.0/29.0)	A1	N/A ^c	-48.3	-36.6	-44.6	-38.1
450A	R-134a/1234ze(E) (42.0/58.0)	A1	N/A ^c	-10.1	-9.0	-23.4	-22.8
451A	R-1234yf/134a (89.8/10.2)	A2L	N/A ^c	-23.4	-22.9	-30.8	-30.5
451B	R-1234yf/134a (88.8/11.2)	A2L	N/A ^c	-23.8	-23.1	-31.0	-31.0
452A	R-32/125/1234yf (11.0/59.0/30.0)	A1	N/A ^c	-52.6	-45.8	-47.0	-43.2
452B	R-32/125/1234yf (67.0/7.0/26.0)	A2L	N/A ^c	-59.8	-58.5	-51.0	-50.3
452C	R-32/125/1234yf (12.5/61.0/26.5)	A1	N/A ^c	-53.5	-47.6	-47.5	-44.2
453A	R-32/125/134a/227ea/600/601a (20.0/20.0/53.8/5.0/0.6/0.6)	A1	N/A ^c	-44.0	-31.0	-42.2	-35.0
454A	R-32/1234yf (35.0/65.0)	A2L	N/A ^c	-55.1	-42.9	-48.4	-41.6
454B	R-32/1234yf (68.9/31.1)	A2L	N/A ^c	-59.6	-58.0	-50.9	-50.0
454C	R-32/1234yf (21.5/78.5)	A2L	N/A ^c	-50.8	-36.0	-46.0	-37.8
455A	R-744/32/1234yf (3.0/21.5/75.5)	A2L	N/A ^c	-60.9	-38.4	-51.6	-39.1
456A	R-32/134a/1234ze(E) (6.0/45.0/49.0)	A1	N/A ^c	-22.7	-14.1	-30.4	-25.6
457A	R-32/1234yf/152a (18.0/70.0/12.0)	A2L	N/A ^c	-44.9	-31.9	-42.7	-35.5
458A	R-32/125/134a/227ea/236fa (20.5/4.0/61.4/13.5/0.6)	A1	N/A ^c	-39.6	-26.3	-39.8	-32.4
459A	R-32/1234yf/1234ze(E) (68.0/26.0/6.0)	A2L	N/A ^c	-58.6	-55.5	-50.3	-48.6
459B	R-32/1234yf/1234ze(E) (21.0/69.0/10.0)	A2L	N/A ^c	-47.2	-33.0	-44.0	-36.1
460A	R-32/125/134a/1234ze(E) (12.0/52.0/14.0/22.0)	A1	N/A ^c	-48.3	-35.0	-44.6	-37.2
460B	R-32/125/134a/1234ze(E) (28.0/25.0/20.0/27.0)	A1	N/A ^c	-49.4	-34.8	-45.2	-37.1

^a Source: ASHRAE Standard 34

^b Source: 2013 ASHRAE Handbook—Fundamentals

^c "N/A" indicates a refrigerant for which no GWP information is currently available in the ASHRAE Handbook—Fundamentals. Data on some of these refrigerants may be found in reports of the Refrigeration Technical Options Committee, or, for blends, the GWP may be calculated from the GWP of the pure compounds.

Red Shaded cells indicate refrigerants added since the previous version of the Factsheet.

This list is not intended to be complete or definitive. Please refer to the latest edition of ASHRAE Standard 34 and all published addenda for complete information on refrigerant designations and safety classifications.