Table 2A. Zeotropic Blends (400 Series Refrigerants) and their Allowable Levels of Contaminants (continued)

	Reporting Units	Reference Section	**R-442A**	**R-444A**	**R-444B**	**R-445A**	**R-446A**	**R-447A**	**R-448A**	**R-449A**	**R-449B**
CHARACTERISTICS:											
Refrigerant Components	N/A	N/A	R-32/125/ 134a/152a/ 227ea	R-32/152a/ 1234ze(E)	R-32/152a/ 1234ze(E)	R-744/ 134a/ 1234ze(E)	R-32/ 1234ze(E)/ 600	R-32/ 125/ 1234ze (E)	R-32/125/ 1234yf/ 134a/ 1234ze(E)	R-32/125/ 1234yf/ 134a	R-32/125/ 1234yf/134a
Nominal Composition	% by weight	N/A	31.0/31.0/ 30.0/3.0/ 5.0	12.0/5.0/ 83.0	41.5/10.0/ 48.5	6.0/9.0/ 85.0	68.0/29.0/ 3.0	68.0/3.5/ 28.5	26.0/26.0/ 20.0/21.0/ 7.0	24.3/24.7/ 25.3/25.7	25.2/24.3/ 23.2/27.3
Allowable Composition	% by weight	N/A	30.0-32.0/ 30.0-32.0/ 29.0-31.0/ 2.5-3.5/ 4.0- 6.0	11.0-13.0/ 4.0-6.0/ 81.0-85.0	40.5-42.5/ 9.0-11.0/ 47.5-49.5	5.0-7.0/ 8.0-10.0/ 83.0-87.0	67.0-68.5/ 28.4-31.0/ 2.0-3.1	67.5-69.5/ 3.0-5.0/ 27.5-29.5	24.0-26.5/ 25.5-28.0/ 18.0-20.5/ 20.0-23.0/ 5.0-7.5	23.3-24.5/ 24.5-25.7/ 24.3-25.5/ 25.5-26.7	23.7-25.5/ 24.0-25.8/ 21.7-23.5/ 27.0-28.8
Bubble Point[1]	°C @ 101.3 kPa	N/A	-46.5	-34.3	-44.6	-50.3	-49.4	-49.3	-45.9	-46	-46.1
Dew Point[1]	°C @ 101.3 kPa	N/A	-39.9	-24.3	-34.9	-23.5	-42.1	-44.2	-39.8	-39.9	-40.2
Critical Temperature[1]	°C	N/A	82.4	103.2	91.5	98	84.2	82.6	81.6	81.5	84.2
VAPOR PHASE CONTAMINANTS:											
Air and Other Non-condensables, Max.	% by volume @ 25.0 °C	5.10	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
LIQUID PHASE CONTAMINANTS:											
Water, Maximum	ppm by weight	5.4	10	10	10	10	10	10	10	10	10
All Other Volatile Impurities, Max.	% by weight	5.11	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
High Boiling Residue, Max.	% by volume or % by weight	5.8	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Particulates/Solids	Pass or Fail	5.9	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean	Visually clean
Acidity, Max.	ppm by weight (as HC1)	5.7	1	1	1	1	N/A	1	1	1	1
Chloride[2]	Pass or Fail	5.6	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity	No visible turbidity

1. Bubble points, dew points, and critical temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.
2. Recognized chloride level for pass/fail is about 3 ppm.