Table 1A. Single Component Fluorocarbon Refrigerants and their Allowable Levels of Contaminants (continued)

	Reporting Units	Reference Section	R-142b	R-143a	R-152a	R-218	R-227ea	R-236fa	R-245fa	R-1233zd(E)	R-1234yf	R-1234ze(E)	R-1336mzz(Z)
CHARACTERISTICS:													
Boiling Point[1]	°C @ 101.3 kPa	N/A	-9.2	-47.2	-24	-36.8	-16.5	-1.4	14.9	18.3	-29.4	-19	33.4
Boiling Point Range[1]	K	N/A	--	± 0.3	± 0.3	± 0.3	--	± 0.3	± 0.3	--	N/A	N/A	N/A
Critical Temperature[1]	°C	N/A	137.1	72.7	113.3	72	101.7	124.9	154.1	165.6	94.8	109.4	171.3
Isomer Content	% by weight	N/A	0-0.1ea R-142, R-142a	0-0.01 R-143	N/A	--	--	--	0-0.1ea R-245ca, R-245cb, R-245ea, R-245eb	--	N/A	0.3 R-1234ze(Z)	0 - 0.1 R-1336mzz(E)
VAPOR PHASE CONTAMINANTS:													
Air and Other Non-condensables, Max.	% by volume @ 25.0 °C	5.10	2	1.5	1.5	1.5	1.5	1.5	N/A[2]	N/A[2]	1.5	1.5	N/A[2]
LIQUID PHASE CONTAMINANTS:													
Water, Maximum	ppm by weight	5.4	15	10	10	10	10	10	20	20	10	10	20
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	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	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	Visually clean	Visually clean
Acidity, Max.	ppm by weight (as HCl)	5.7	3	1	1	1	1	1	1	1	1	1	1
Chloride[3]	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	No visible turbidity	No visible turbidity

1. Boiling points, boiling point ranges, and critical temperatures, although not required, are provided for informational purposes. Refrigerant data compiled from Refprop 9.1.
2. Since R-11, R-113, R-123, R-141b, R-245fa, R-1233zd(E), and R-1336mzz(Z) have normal boiling points near or above room temperature, non-condensable determinations are not required for these refrigerants.
3. Recognized chloride level for pass/fail is about 3 ppm.
-- Data Not Available