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A collection of short pointed topical papers.

Cold W·A·R·

Whether it's Air Conditioning or Refrigeration

SPORLAN

VLT Refrigeration

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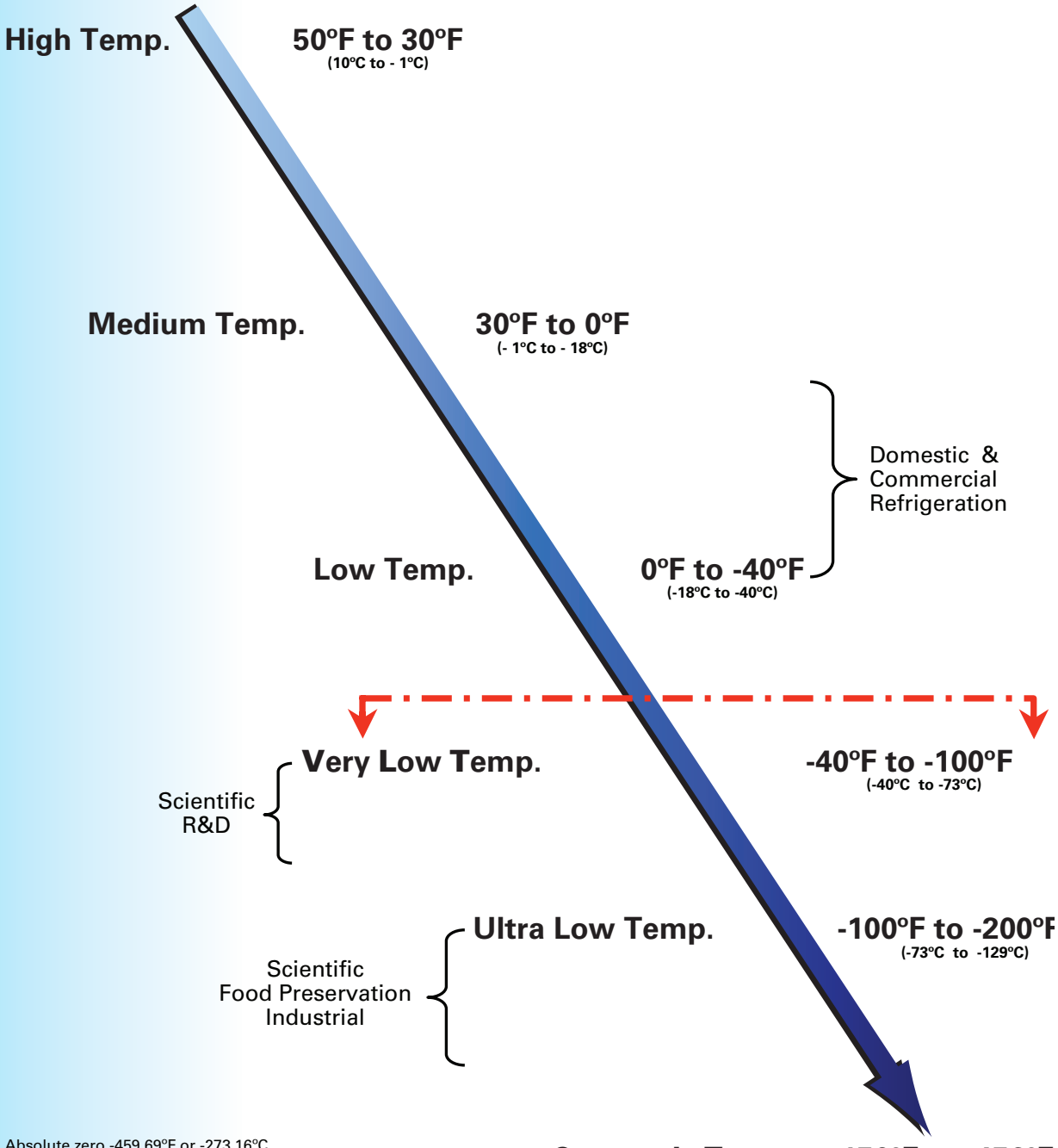
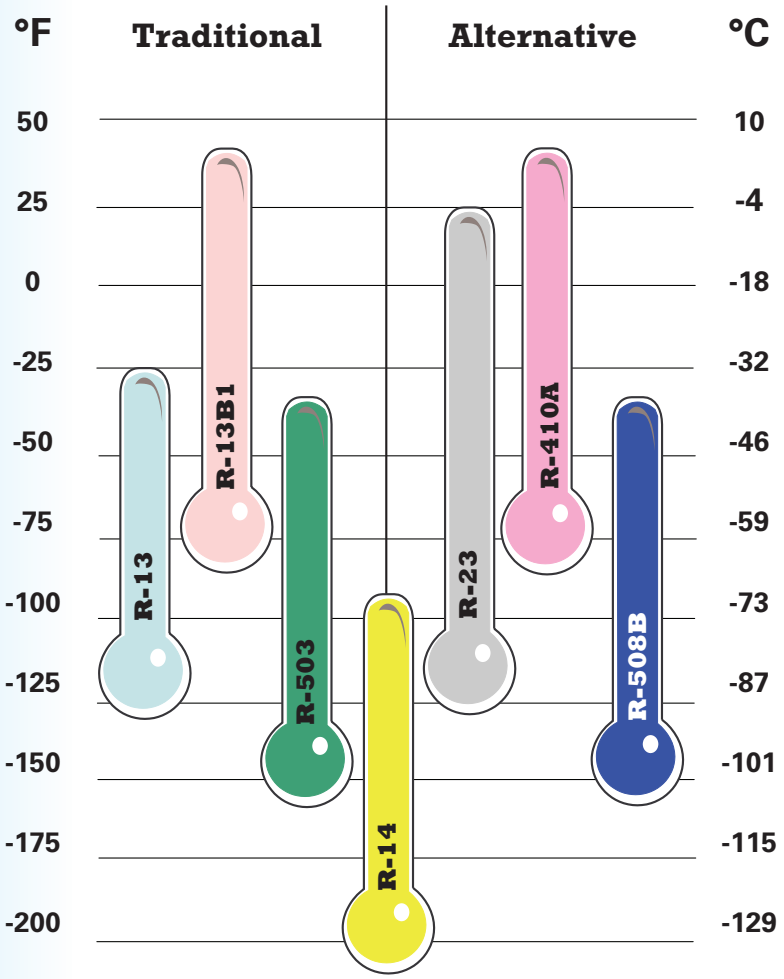
Cold W.A.R. Issue 052

Generally Accepted Temperature Ranges



Absolute zero -459.69°F or -273.16°C
Absolute temperature units are °F to Rankin, °C to Kelvin
Temperature ranges based on Sporlan TEV remote bulb charges

Temperature Range



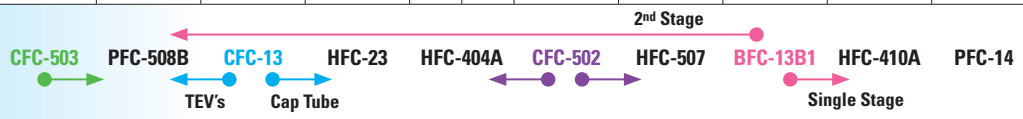
VLT Refrigerants and other Low Temp Refrigerants

	T_c °F	P_c psia
R-13	84	561
R-13B1	153	575
R-14	-50	543
R-22	205	722
R-23	78	701
R-134a	214	588
R-404A	162	541
R-407C	188	670
R-410A	162	715
R-502	180	591
R-503	67	632
R-507A	159	537
R-508B	57	569

T_c critical temperature P_c critical pressure

Conversion Pressure / Temperature Relationship Factors

	°F	R-503	R-508B	R-13	R-23	R-404A		R-502	R-507	R-13B1	R-410A	R-14	°C
ULT	-200	27.7″	----	----	----	----	----	----	----	----	----	2.5″	-129.0
	-180	25.6″	28.6″	27.0″	----	----	----	----	----	----	----	14.1	-118.0
	-160	20.0″	22.1″	23.5″	27.8″	Bubble	Dew	----	----	----	----	38.8	-107.0
	-140	9.5″	11.6″	17.0″	17.0″	28.5″	28.7″	----	27.7″	----	28.0″	77.3	-95.6
	-120	3.9	3.0	5.0″	3.7″	26.5″	26.8″	----	25.6″	25.9″	25.3″	132.8	-84.4
	-110	9.9	9.2	1.9	2.9	25.0″	25.4″	----	24.3″	21.9″	23.3″	168.1	-78.9
VLT	-100	17.3	16.9	7.4	8.9	22.9″	23.4″	----	22.5″	17.4″	20.5″	209.0	-73.3
	-90	26.4	25.4	14.2	16.6	20.1″	20.8″	25.3″	20.0″	12.3″	16.8″	256.3	-67.8
	-80	37.5	37.9	22.5	26.1	16.5″	17.3″	19.1″	16.5″	6.0″	12.0″	310.8	-62.2
	-70	50.7	51.7	32.4	37.8	11.8″	12.7″	13.1″	11.8″	0.8	5.8″	373.6	-56.7
	-60	66.5	68.1	44.1	52.0	5.8″	6.9″	6.8″	5.7″	5.3	1.0	446.0	-51.1
	-50	85.0	87.3	57.7	68.8	0.8	0.2	0.1	0.9	10.7	5.8	----	-45.6
LT	-40	106.6	109.6	73.6	88.5	5.3	4.6	4.2	5.6	17.2	11.7	----	-40.0
	-30	131.6	135.3	91.8	111.5	10.7	9.9	9.2	11.2	24.8	18.9	----	-34.4
	-20	160.3	164.8	112.5	137.9	17.2	16.4	15.2	18.0	33.9	27.5	----	-28.9
	-10	193.1	198.3	136.1	168.3	24.9	24.0	22.4	26.0	44.3	37.8	----	-23.3
MT	0	230.2	236.3	162.7	202.9	34.0	33.0	30.9	35.4	56.4	49.8	----	-17.8
	10	271.9	279.0	192.5	242.2	44.7	43.5	40.8	46.3	70.0	63.9	----	-12.2
	20	318.6	326.8	226.0	286.7	56.9	55.7	52.4	58.8	86.0	80.2	----	-6.7
	30	370.6	380.1	263.3	336.9	71.1	69.7	65.6	73.3	103.8	99.0	----	-1.1
HT	40	428.1	----	304.7	393.5	87.2	85.7	80.6	89.7	123.9	120.5	----	4.4
	50	491.5	----	350.6	457.2	105.5	103.9	97.6	108.3	146.3	144.9	----	10.0
	60	560.9	----	401.4	528.7	126.2	124.5	116.6	129.4	171.2	172.5	----	15.6
	70	----	----	457.4	608.9	149.5	147.7	137.8	153.1	198.9	203.6	----	21.1
	80	----	----	519.0	----	175.6	173.7	161.3	179.8	229.6	238.4	----	26.7
	90	----	----	----	----	204.6	202.6	187.4	209.7	263.4	277.3	----	32.2
	100	----	----	----	----	236.9	234.8	216.1	243.0	300.5	320.4	----	37.8
	110	----	----	----	----	272.6	270.5	247.7	280.2	341.1	368.2	----	43.3
	120	----	----	----	----	311.9	310.0	282.4	321.6	385.6	420.9	----	48.9
	130	----	----	----	----	355.2	353.4	320.6	367.5	434.1	478.9	----	54.4



NOTE: ″ express inches mercury vacuum (″ Hg), additional pressure units expressed in psig

Shading is for readability purposes only