

Pressure Temperature Conversion Charts



Refrigerant Reference Guide					
Name	Type	Ozone Depleting	Oil Type	Charging System	Refrigerant Major Applications and Notes
R404A	HFC	No	P.O.E	Liquid only	For new medium & low temperature applications. (Can replace R502 but requires careful retro-fit procedure)
R507	HFC	No	P.O.E	Liquid or Vapour	For new medium & low temperature applications. (Can replace R502 but requires careful retro-fit procedure)
Note: The only difference between R404A & R507 is R404A has 4% of R134A added (for patent reasons)					
R408A	HCFC	Yes	Mineral/P.O.E Alkylbenzene	Liquid only	Interim replacement for R502. (Availability - large scale reductions from 2005)
R502	CFC	Yes	Mineral or Alkylbenzene	Liquid or Vapour	No longer manufactured. (High ozone depleting factor) Used on freezers & medium temp applications - see R408A, R404A, R507.
R22	HCFC	Yes	Mineral or Alkylbenzene	Liquid or Vapour	For air conditioning, medium & occasionally low temperature applications. (Availability - large scale reductions from 2005)
R407C	HFC	No	P.O.E	Liquid only	For new larger to medium air conditioning & some smaller applications. (Can replace R22, careful retro-fit procedure required)
R410A	HFC	No	P.O.E	Liquid only	For new smaller (residential type) air conditioning applications. (Requires high pressure components & service tools)
R134A	HFC	No	P.O.E	Liquid or Vapour	For new medium temp & domestic freezers, small commercial jobs. (Can replace R12 & R500 - but requires careful retro-fit procedure)
SP34E	HFC	No	Mineral/P.O.E Alkylbenzene	Liquid only	Interim replacement for R12. (Can be used on flooded systems ie: temprite systems)
R409A	HCFC	Yes	Mineral/P.O.E Alkylbenzene	Liquid only	Interim replacement for R12. (Not recommended for flooded systems ie: temprite systems)
R12	CFC	Yes	Mineral or Alkylbenzene	Liquid or Vapour	No longer manufactured. (High ozone depleting factor) Used on freezers & medium temp applications - see R409A & SP34E.
R123	HCFC	Yes	Mineral or Alkylbenzene	Liquid only	Interim replacement for R11 - requires careful retro-fit procedure. (Availability - large scale reductions from 2005)
R11	CFC	Yes	Mineral or Alkylbenzene	Liquid only	No longer manufactured. (High ozone depleting factor) Used on centrifugal chiller applications - see R123.

Conversion Tables	
Pressure	Heat Flow
psig × 6.8948 = kPa	BTU/hr × 0.2931 = watts
psig × 0.069 = bar	watts × 3.412 = BTU/hr
bar × 14.5 = psi	Ton Refrig. × 1200 = BTU/hr
bar × 100 = kPa	Ton Refrig. × 3516.8 = watts
kPa × 0.01 = bar	kcal/h × 1.163 = watts
Length	Temperature
metres × 3.281 = feet	°C = 5/9 (°F - 32)
metres × 39.37 = inches	°F = (9/5 × °C) + 32

Saturated Vapour Pressures (Figures in red vacuum inches & -kpa)															
TEMP		R404A		R507		R408A		R502		R407C		R22		R410A	
°F	°C	kpa	psig	kpa	psig	kpa	psig	kpa	psig	kpa	psig	kpa	psig	kpa	psig
-76.0	-60	-53	-16	-49	-14	-57	-17	-53	-16	-75	-22	-64	-19	-35	-10
-68.8	-56	-41	-12	-36	-11	-46	-14	-41	-12	-68	-20	-55	-16	-21	-6
-61.6	-52	-27	-8	-21	-6	-34	-10	-28	-8	-60	-18	-43	-13	-1	0
-54.4	-48	-11	-3	-4	-1	-19	-6	-12	-4	-49	-14	-30	-9	21	3
-47.2	-44	8	1	16	2	-1	0	7	1	-37	-11	-15	-4	46	7
-40.0	-40	30	4	39	6	19	3	28	4	-22	-6	4	1	76	11
-36.4	-38	42	6	52	8	30	4	40	6	-14	-4	14	2	93	13
-32.8	-36	55	8	66	10	43	6	53	8	-5	-1	25	4	111	16
-29.2	-34	69	10	81	12	55	8	67	10	5	1	36	5	130	19
-25.6	-32	83	12	96	14	69	10	81	12	16	2	49	7	150	22
-22.0	-30	99	14	113	16	84	12	97	14	27	4	62	9	173	25
-18.4	-28	116	17	131	19	100	15	113	16	39	6	76	11	194	28
-14.8	-26	134	19	150	22	117	17	131	19	52	8	92	13	221	32
-11.2	-24	154	22	170	25	135	20	149	22	66	10	108	16	245	36
-7.6	-22	174	25	192	28	154	22	169	25	81	12	125	18	273	40
-4.0	-20	196	28	214	31	174	25	190	28	97	14	143	21	302	44
-0.4	-18	219	32	238	35	195	28	212	31	114	17	163	24	332	48
3.2	-16	243	35	264	38	218	32	235	34	133	19	184	27	366	53
6.8	-14	269	39	291	42	242	35	260	38	152	22	205	30	399	58
10.4	-12	297	43	319	46	267	39	286	41	173	25	229	33	435	63
14.0	-10	324	47	349	51	294	43	313	45	195	28	253	37	475	69
17.6	-8	355	51	380	55	322	47	342	50	218	32	279	40	516	75
21.2	-6	387	56	414	60	352	51	372	54	243	35	306	44	560	81
24.8	-4	420	61	448	65	383	56	404	59	269	39	334	48	605	88
28.4	-2	455	66	485	70	416	60	437	63	297	43	365	53	654	95
32.0	0	493	72	524	76	450	65	472	68	326	47	396	57	704	102
35.6	2	532	77	564	82	487	71	508	74	357	52	429	62	755	110
39.2	4	572	83	606	88	525	76	547	79	390	57	464	67	811	118
42.8	6	615	89	651	94	565	82	587	85	424	61	501	73	855	124
46.4	8	660	96	697	101	606	88	628	91	461	67	539	78	928	135
50.0	10	707	103	746	108	650	94	672	97	499	72	579	84	992	144
53.6	12	756	110	797	116	696	101	717	104	539	78	621	90	1057	153
57.2	14	808	117	850	123	744	108	765	111	581	84	665	96	1128	164
60.8	16	862	125	905	131	794	115	814	118	625	91	711	103	1198	174
64.4	18	918	133	963	140	846	123	865	125	672	97	759	110	1275	185
68.0	20	976	142	1023	148	900	131	918	133	721	105	808	117	1350	196
75.2	24	1101	160	1151	167	1016	147	1031	150	825	120	915	133	1520	220
82.4	28	1236	179	12190	187	1142	166	1153	167	940	136	1029	149	1699	246
89.6	32	1382	200	1440	209	1278	185	1284	186	1065	154	1154	167	1896	275
96.8	36	1540	223	1602	232	1425	207	1425	207	1202	174	1288	187	2108	306
104.0	40	1711	248	1777	258	1583	230	1576	229	1350	196	1432	208	2335	339
107.6	42	1800	261	1869	271	1666	242	1655	240	1429	207	1508	219	2454	356
111.2	44	1894	275	1964	285	1753	254	1737	252	1511	219	1587	230	2581	374
114.8	46	1990	289	2063	299	1842	267	1822	264	1597	232	1669	242	2708	393
118.4	48	2090	303	2165	314	1935	281	1909	277	1686	245	1753	254	2843	412
122.0	50	2194	318	2271	329	2031	295	2000	290	1778	258	1841	267	2980	432
125.6	52	2301	334	2381	345	2131	309	2094	304	1874	272	1931	280	3125	453
129.2	54	2412	350	2494	362	2234	324	2190	318	1974	286	2025	294	3271	474
132.8	56	2526	366	2612	379	2341	340	2290	332	2078	301	2122	308	3428	497
140.0	60	2767	401	2858	415	2564	372	2500	363	2297	333	2325	337	3747	543

Saturated Vapour Pressures (Figures in red vacuum inches & -kpa)

TEMP		R134A		SP34E		R409A		R12		R123		R11		R717	
°F	°C	kpa	psig	kpa	psig	kpa	psig	kpa	psig	kpa	psig	kpa	psig	kpa	psig
-76.0	-60							-79	-23			-100	-30	-79	-23
-68.8	-56							-73	-22			-99	-29	-72	-21
-61.6	-52							-66	-19			-99	-29	-65	-19
-54.4	-48	-68	-20			-68	-20	-58	-17			-98	-29	-55	-16
-47.2	-44	-60	-18			-60	-18	-48	-14			-97	-29	-43	-13
-40.0	-40	-50	-15	-50	-15	-50	-15	-37	-11	-98	-29	-96	-28	-29	-9
-36.4	-38	-45	-13	-45	-13	-44	-13	-31	-9	-97	-29	-95	-28	-22	-6
-32.8	-36	-38	-11	-38	-11	-38	-11	-24	-7	-96	-28	-94	-28	-13	-4
-29.2	-34	-32	-9	-31	-9	-32	-9	-17	-5	-96	-28	-94	-28	-3	-1
-25.6	-32	-25	-7	-25	-7	-25	-7	-9	-3	-95	-28	-93	-27	13	2
-22.0	-30	-17	-5	-17	-5	-17	-5	-1	0	-94	-28	-92	-27	18	3
-18.4	-28	-9	-3	-9	-3	-9	-3	8	1	-93	-27	-91	-27	30	4
-14.8	-26	0.3	0.1	0.5	0.1	-1	0	17	2	-92	-27	-90	-27	43	6
-11.2	-24	10	1	10	1	9	1	27	4	-91	-27	-88	-26	57	8
-7.6	-22	20	3	20	3	19	3	38	6	-90	-27	-87	-26	72	10
-4.0	-20	31	4	32	5	29	4	50	7	-89	-26	-85	-25	89	13
-0.4	-18	43	6	44	6	41	6	62	9	-88	-26	-84	-25	106	15
3.2	-16	56	8	56	8	53	8	75	11	-86	-25	-82	-24	125	18
6.8	-14	69	10	70	10	66	10	88	13	-84	-25	-80	-24	145	21
10.4	-12	84	12	84	12	80	12	103	15	-83	-25	-78	-23	167	24
14.0	-10	99	14	100	15	95	14	118	17	-81	-24	-76	-22	190	28
17.6	-8	115	17	116	17	111	16	134	19	-79	-23	-73	-22	214	31
21.2	-6	133	19	134	19	127	18	151	22	-77	-23	-70	-21	240	35
24.8	-4	151	22	152	22	145	21	169	25	-74	-22	-67	-20	268	39
28.4	-2	171	25	172	25	164	24	187	27	-71	-21	-64	-19	298	43
32.0	0	191	28	192	28	184	27	207	30	-69	-20	-61	-18	392	48
35.6	2	213	31	215	31	205	30	228	33	-66	-19	-57	-17	362	53
39.2	4	236	34	238	35	227	33	250	36	-62	-18	-54	-16	397	58
42.8	6	260	38	262	38	250	36	273	40	-59	-17	-50	-15	434	63
46.4	8	286	41	288	42	275	40	297	43	-55	-16	-45	-13	474	69
50.0	10	313	45	316	46	301	44	322	47	-51	-15	-41	-12	515	75
53.6	12	341	49	344	50	328	48	348	50	-46	-14	-36	-11	559	81
57.2	14	371	54	375	54	357	52	376	55	-42	-12	-31	-9	605	88
60.8	16	402	58	406	59	387	56	404	59	-37	-11	-25	-7	653	95
64.4	18	435	63	440	64	419	61	434	63	-31	-9	-19	-6	704	102
68.0	20	470	68	470	68	452	66	466	68	-26	-8	-13	-4	758	110
75.2	24	544	79	557	81	524	76	533	77	-13	-4	1	0	873	127
82.4	28	625	91	623	90	602	87	605	88	1	0	16	2	1000	145
89.6	32	713	103	698	101	687	100	683	99	16	2	33	5	1140	165
96.8	36	810	117	792	115	781	113	768	111	34	5	51	7	1290	187
104.0	40	915	133	880	128	882	128	859	125	53	8	72	10	1460	212
107.6	42	970	141	927	134	936	136	907	132	64	9	83	12	1540	223
111.2	44	1028	149	977	142	992	144	957	139	75	11	95	14	1630	236
114.8	46	1089	158	1026	149	1051	152	1009	146	86	12	107	16	1730	251
118.4	48	1151	167	1078	156	1111	161	1062	154	98	14	120	17	1830	265
122.0	50	1216	176	1130	164	1174	170	1118	162	111	16	133	19	1930	280
125.6	52	1284	186	1193	173	1240	180	1175	170	125	18	147	21	2040	296
129.2	54	1354	196	1249	181	1308	190	1234	179	139	20	162	23	2155	313
132.8	56	1427	207	1312	190	1379	200	1295	188	153	22	177	26	2270	329
140.0	60	1581	229	1450	210	1529	222	1424	207	185	27	210	30	2510	364