Table 28 .... Refrigerant 1150 (Ethylene) Properties of Liquid and Saturated Vapor

Temp F	Pressure psia	Pressure psig	Volume cu ft/lb Vapor v_g	Density lb/cu ft Liquid $1/v_f$	Enthalpy** Btu/lb Liquid h_f	Enthalpy** Btu/lb Vapor h_g	Entropy** Btu/(lb) (°R) Liquid s_f	Entropy** Btu/(lb) (°R) Vapor s_g
−176.8	6.73	16.18*	16.4	36.60	0	213.9	0.000	0.756
−173.2	7.72	14.21*	14.5	36.42	1.8	214.5	.006	.749
−169.6	8.80	12.01*	12.7	36.23	3.5	215.1	.012	.742
−166.0	10.00	9.57*	11.1	36.05	5.3	215.8	.018	.735
−162.4	11.35	6.82*	9.71	35.87	7.1	216.3	.024	.728
−158.8	12.80	3.87*	8.62	35.69	9.0	216.9	0.030	0.722
−155.2	14.44	0.52*	7.62	35.51	10.8	217.5	.036	.716
−151.6	16.22	1.53	6.76	35.32	12.6	218.1	.043	.710
−148.0	18.17	3.47	6.06	35.14	14.5	218.7	.048	.704
−144.4	20.38	5.68	5.49	34.96	16.4	219.2	.054	.698
−140.8	22.65	7.95	4.98	34.78	18.3	219.9	0.060	0.693
−137.2	25.17	10.47	4.50	34.60	20.2	220.6	.066	.688
−133.6	27.91	13.21	4.08	34.42	22.2	221.2	.072	.683
−130.0	30.85	16.15	3.72	34.23	24.1	221.8	.078	.678
−126.4	34.06	19.36	3.39	34.05	26.0	222.3	.084	.673
−122.8	37.50	22.80	3.11	33.87	28.1	223.1	0.090	0.669
−119.2	41.19	26.49	2.85	33.69	30.1	223.8	.096	.665
−115.6	45.16	30.46	2.62	33.50	32.2	224.6	.102	.661
−112.0	49.40	34.70	2.40	33.30	34.2	225.3	.108	.658
−108.4	53.93	39.23	2.21	33.11	36.3	226.0	.114	.654
−104.8	58.76	44.06	2.04	32.91	38.4	226.7	0.120	0.650
−101.2	63.90	49.20	1.89	32.72	40.5	227.3	.125	.647
− 97.6	69.37	54.67	1.75	32.50	42.6	228.0	.131	.643
− 94.0	75.17	60.47	1.62	32.28	44.8	228.7	.137	.640
− 90.4	81.32	66.62	1.51	32.07	47.0	229.4	.143	.637
− 86.8	87.88	73.18	1.40	31.85	49.2	230.1	0.149	0.634
− 83.2	94.76	80.06	1.31	31.64	51.4	230.8	.155	.631
− 79.6	102.0	87.3	1.22	31.42	53.7	231.5	.161	.628
− 76.0	109.7	95.0	1.14	31.20	55.9	232.1	.166	.626
− 72.4	117.7	103.0	1.07	30.98	58.3	232.9	.172	.623
− 68.8	126.2	111.5	1.00	30.76	60.6	233.5	0.178	0.621
− 65.2	135.1	120.4	0.935	30.54	63.0	234.3	.184	.618
−61.6	144.4	129.7	0.885	30.31	65.3	234.9	0.190	0.616
−58.0	154.2	139.5	.826	30.07	67.8	235.5	.196	.613
−54.4	164.5	149.8	.775	29.83	70.3	235.8	.202	.610
−50.8	175.2	160.5	.730	29.68	72.7	236.1	.208	.608
−47.2	186.7	172.0	.685	29.34	75.3	236.4	.214	.605
−43.6	198.1	183.4	0.645	29.10	77.8	236.7	0.220	0.602
−40.0	210.6	195.7	.606	28.84	80.4	237.0	.226	.599
−36.4	223.2	208.5	.571	28.58	83.0	237.3	.232	.596
−32.8	236.6	221.9	.535	28.32	85.7	237.5	.238	.594
−29.2	250.5	235.8	.503	28.04	88.4	237.4	.244	.590
−25.6	265.2	250.6	0.474	27.78	91.1	237.4	0.250	0.587
−22.0	280.1	265.4	.444	27.47	93.9	237.4	.256	.584
−18.4	296.0	281.3	.418	27.18	96.8	237.2	.263	.581
−14.8	312.2	297.5	.392	26.87	99.6	236.8	.269	.577
−11.2	329.3	314.6	.368	26.56	102.7	236.4	.275	.573
− 7.6	346.8	332.1	0.345	26.24	105.7	235.9	0.283	0.570
− 4.0	365.5	350.8	.323	25.92	108.8	235.3	.288	.566
− 0.4	384.3	369.6	.302	25.57	112.0	234.8	.295	.562
+ 3.2	404.4	389.7	.283	25.22	115.2	234.2	.301	.558
6.8	424.7	410.0	.266	24.84	118.7	233.6	.308	.555
10.4	446.5	431.8	0.249	24.45	122.3	233.0	0.316	0.551
14.0	468.7	454.0	.234	24.03	126.0	232.4	.323	.548
17.6	491.8	477.1	.218	23.60	130	232	.331	.545
21.2	515.0	500.3	.205	23.13	134	230	.339	.541
24.8	540.4	525.7	.190	22.58	138	229	.348	.537
28.4	565.7	551.0	0.178	22.09	142	228	0.357	0.533
32.0	593.3	578.6	.163	21.48	147	226	.367	.529
35.6	619.8	606.1	.149	20.83	152	224	.377	.523
39.2	649.8	635.1	.135	20.04	158	222	.389	.520
42.8	678.0	664.3	.121	19.12	166	218	.404	.508
46.4	710.3	695.6	0.103	17.92	177	211	0.420	0.494
48.85†	731.8	717.1	.074	13.48	194	194	.460	.460

* Inches of mercury below one standard atmosphere.
† Critical.
** Based on 0 for the saturated liquid at −176.8 F. Note that the base is different in Fig. 16.

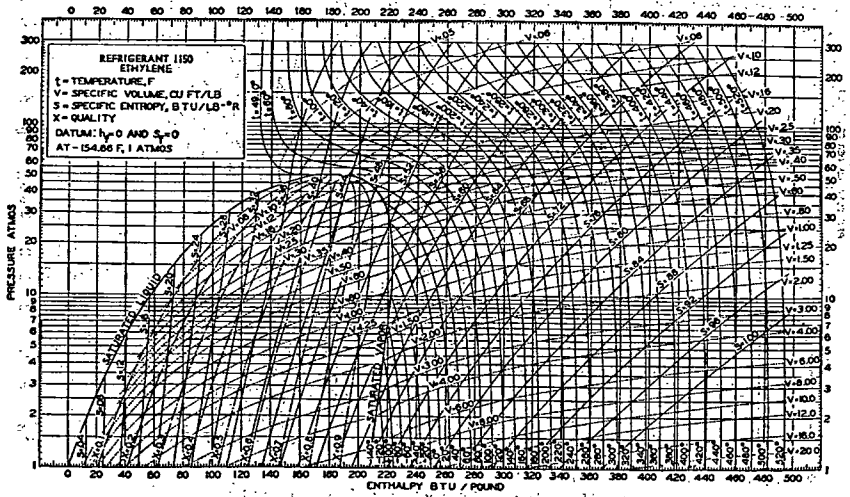

Fig. 16.... Pressure-Enthalpy Diagram for Refrigerant 1150

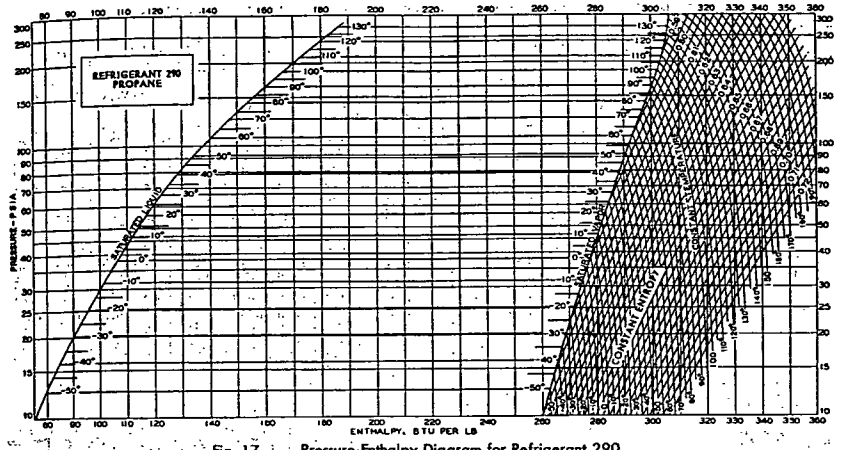

Fig. 17 .... Pressure-Enthalpy Diagram for Refrigerant 290

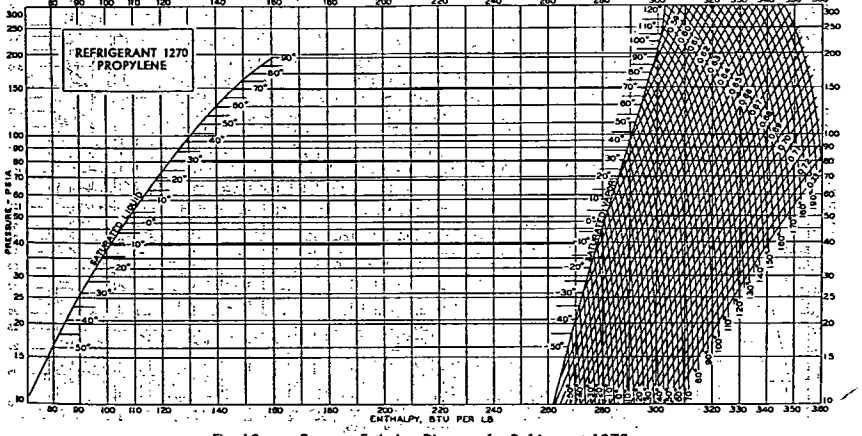

Fig. 18 .... Pressure-Enthalpy Diagram for Refrigerant 1270

Table 29 .... Refrigerant 30 (Methylene Chloride) Properties of Liquid and Saturated Vapor

Temp F	Pressure psia	Pressure psig	Volume cu ft/lb Vapor v_g	Density lb/cu ft Liquid $1/v_f$	Enthalpy Btu/lb Liquid h_f	Enthalpy Btu/lb Vapor h_g	Entropy Btu/(lb) (°R) Liquid s_f	Entropy Btu/(lb) (°R) Vapor s_g
10	1.38	27.12*	42.55	.....	3.4	164.4	0.0072	0.3502
20	1.92	26.01*	31.40	.....	8.8	165.6	.0151	.3461
30	2.66	24.71*	23.90	.....	10.2	166.9	.0222	.3425
40	3.55	23.04*	18.50	.....	13.6	168.0	.0285	.3377
60	5.82	18.72*	11.68	.....	20.4	170.1	.0410	.3292
80	8.81	12.02*	7.50	.....	27.2	172.0	0.0520	0.3202
100	12.25	2.97*	5.14	.....	34.0	173.7	.0620	.3118
120	19.20	4.50	3.65	.....	40.8	175.0	.0714	.3031
140	26.79	12.09	2.69	.....	47.6	176.0	.0795	.2935
....	....	....	....	.....	....	....	....	....

* Inches of mercury below one standard atmosphere.