

Saturation Properties for Carbon dioxide — Temperature Increments

Liquid Phase Data

Data on Saturation Curve

Temperature (C)	Pressure (bar)	Density (kg/m ³)	Volume (m ³ /kg)	Internal Energy (kJ/kg)	Enthalpy (kJ/kg)	Entropy (J/g*K)	Cv (J/g*K)	Cp (J/g*K)	Sound Spd. (m/s)	Joule-Thomson (K/bar)	Viscosity (uPa*s)	Therm. Cond. (W/m*K)	Surf. Tension (N/m)	Phase
-50.000	6.8234	1154.6	0.00086613	92.352	92.943	0.57939	0.96551	1.9712	928.50	-0.011908	229.30	0.17206	0.015532	liquid
-45.000	8.3184	1135.8	0.00088046	102.14	102.87	0.62282	0.95898	1.9892	892.45	-0.0096311	210.68	0.16563	0.014316	liquid
-40.000	10.045	1116.4	0.00089572	112.00	112.90	0.66564	0.95289	2.0117	856.30	-0.0069889	193.75	0.15930	0.013121	liquid
-35.000	12.024	1096.4	0.00091204	121.95	123.05	0.70794	0.94729	2.0393	819.93	-0.0039116	178.33	0.15304	0.011950	liquid
-30.000	14.278	1075.7	0.00092960	132.01	133.34	0.74982	0.94224	2.0731	783.17	-0.00030855	164.22	0.14686	0.010803	liquid
-25.000	16.827	1054.2	0.00094860	142.20	143.79	0.79141	0.93785	2.1145	745.82	0.0039412	151.26	0.14073	0.0096826	liquid
-20.000	19.696	1031.7	0.00096931	152.54	154.45	0.83283	0.93437	2.1653	707.52	0.0090014	139.33	0.13464	0.0085898	liquid
-15.000	22.908	1008.0	0.00099208	163.07	165.34	0.87421	0.93241	2.2283	667.77	0.015092	128.29	0.12859	0.0075265	liquid
-10.000	26.487	982.93	0.0010174	173.83	176.52	0.91571	0.93300	2.3072	626.06	0.022511	118.02	0.12254	0.0064953	liquid
-5.0000	30.459	956.21	0.0010458	184.86	188.05	0.95756	0.93711	2.4085	582.19	0.031682	108.42	0.11650	0.0054987	liquid
0.0000	34.851	927.43	0.0010782	196.24	200.00	1.0000	0.94493	2.5423	536.44	0.043249	99.394	0.11043	0.0045403	liquid
5.0000	39.695	896.03	0.0011160	208.07	212.50	1.0434	0.95581	2.7268	489.28	0.058236	90.816	0.10431	0.0036243	liquid
10.000	45.022	861.12	0.0011613	220.50	225.73	1.0884	0.96913	2.9976	440.97	0.078356	82.557	0.098119	0.0027567	liquid
15.000	50.871	821.21	0.0012177	233.79	239.99	1.1359	0.98587	3.4360	391.10	0.10670	74.433	0.091862	0.0019456	liquid
20.000	57.291	773.39	0.0012930	248.46	255.87	1.1877	1.0114	4.2637	337.65	0.14973	66.148	0.085683	0.0012034	liquid
25.000	64.342	710.50	0.0014075	265.73	274.78	1.2485	1.0704	6.4674	274.26	0.22565	57.048	0.080789	0.00055276	liquid
30.000	72.137	593.31	0.0016855	292.40	304.55	1.3435	1.4063	35.338	177.23	0.42789	43.768	0.095356	5.4485e-05	liquid

Vapor Phase Data

Data on Saturation Curve

Temperature (C)	Pressure (bar)	Density (kg/m ³)	Volume (m ³ /kg)	Internal Energy (kJ/kg)	Enthalpy (kJ/kg)	Entropy (J/g*K)	Cv (J/g*K)	Cp (J/g*K)	Sound Spd. (m/s)	Joule-Thomson (K/bar)	Viscosity (uPa*s)	Therm. Cond. (W/m*K)	Phase
-50.000	6.8234	17.925	0.055789	394.61	432.68	2.1018	0.64831	0.95194	223.39	2.4143	11.307	0.011578	vapor
-45.000	8.3184	21.717	0.046046	395.83	434.13	2.0747	0.66398	0.98996	223.57	2.2765	11.585	0.012041	vapor
-40.000	10.045	26.121	0.038284	396.87	435.32	2.0485	0.68068	1.0333	223.50	2.1512	11.869	0.012540	vapor
-35.000	12.024	31.216	0.032035	397.71	436.23	2.0230	0.69847	1.0830	223.15	2.0368	12.161	0.013084	vapor
-30.000	14.278	37.098	0.026956	398.33	436.82	1.9980	0.71745	1.1406	222.54	1.9318	12.464	0.013680	vapor
-25.000	16.827	43.880	0.022789	398.71	437.06	1.9732	0.73789	1.2083	221.63	1.8347	12.781	0.014344	vapor
-20.000	19.696	51.700	0.019343	398.79	436.89	1.9485	0.76021	1.2893	220.41	1.7440	13.115	0.015093	vapor
-15.000	22.908	60.728	0.016467	398.55	436.27	1.9237	0.78467	1.3877	218.85	1.6583	13.474	0.015953	vapor
-10.000	26.487	71.185	0.014048	397.93	435.14	1.8985	0.81130	1.5091	216.94	1.5768	13.863	0.016960	vapor
-5.0000	30.459	83.359	0.011996	396.84	433.38	1.8725	0.84026	1.6628	214.68	1.4987	14.295	0.018171	vapor
0.0000	34.851	97.647	0.010241	395.20	430.89	1.8453	0.87220	1.8648	212.04	1.4227	14.786	0.019671	vapor
5.0000	39.695	114.62	0.0087244	392.85	427.48	1.8163	0.90835	2.1440	208.97	1.3469	15.361	0.021601	vapor
10.000	45.022	135.16	0.0073988	389.57	422.88	1.7847	0.95074	2.5578	205.41	1.2689	16.059	0.024206	vapor
15.000	50.871	160.73	0.0062216	384.99	416.64	1.7489	1.0029	3.2371	201.21	1.1847	16.952	0.027961	vapor
20.000	57.291	194.20	0.0051493	378.36	407.87	1.7062	1.0725	4.5599	196.09	1.0877	18.187	0.033943	vapor
25.000	64.342	242.73	0.0041198	367.92	394.43	1.6498	1.1819	8.2123	189.12	0.96220	20.157	0.045509	vapor
30.000	72.137	345.10	0.0028977	344.23	365.13	1.5433	1.5228	55.822	171.26	0.73936	25.170	0.098023	vapor

Reference States

Internal energy	U = 0 at 273.16 K for saturated liquid.
Entropy	S = 0 at 273.16 K for saturated liquid.

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