

R-744 pressure–temperature chart

Carbon Dioxide — a natural refrigerant. Also written R744. Saturation pressure from −56 to 28 °C, every 2 K, in kPa gauge and bar gauge, computed with CoolProp.

SAFETY CLASS A1 Lower toxicity, no flame propagation	GWP, 100-YEAR 1 (AR4 and AR6) IPCC assessment reports	ODP 0 Montreal Protocol
CRITICAL POINT 30.98 °C · 7,377.3 kPa abs CoolProp, from its equation of state	TRIPLE POINT −56.56 °C · 518.0 kPa abs Above 101.325 kPa: no liquid at one atmosphere	

SATURATION PRESSURE			SATURATION PRESSURE			SATURATION PRESSURE		
T (°C)	kPa g	bar g	T (°C)	kPa g	bar g	T (°C)	kPa g	bar g
−56	429.3	4.29	−26	1,527.9	15.28	4	3,767.5	37.68
−54	476.7	4.77	−24	1,636.2	16.36	6	3,970.7	39.71
−52	527.2	5.27	−22	1,749.6	17.50	8	4,181.7	41.82
−50	581.0	5.81	−20	1,868.3	18.68	10	4,400.9	44.01
−48	638.2	6.38	−18	1,992.5	19.93	12	4,628.3	46.28
−46	698.8	6.99	−16	2,122.4	21.22	14	4,864.4	48.64
−44	763.1	7.63	−14	2,258.0	22.58	16	5,109.5	51.09
−42	831.2	8.31	−12	2,399.6	24.00	18	5,363.8	53.64
−40	903.2	9.03	−10	2,547.4	25.47	20	5,627.7	56.28
−38	979.2	9.79	−8	2,701.4	27.01	22	5,901.8	59.02
−36	1,059.4	10.59	−6	2,861.8	28.62	24	6,186.4	61.86
−34	1,143.9	11.44	−4	3,028.9	30.29	26	6,482.4	64.82
−32	1,232.9	12.33	−2	3,202.9	32.03	28	6,790.5	67.90
−30	1,326.4	13.26	0	3,383.8	33.84			
−28	1,424.7	14.25	2	3,572.0	35.72			

NOTES	Gauge pressure is absolute pressure less a standard atmosphere, 101.325 kPa; below it, gauge pressure is negative.
SOURCES	Computed with CoolProp 7.2.1dev (HEOS backend, MIT licence), from published equations of state. Cite: Bell, I.H., Wronski, J., Quoilin, S., Lemort, V. (2014). Pure and pseudo-pure fluid thermophysical property evaluation and the open-source thermophysical property library CoolProp. Ind. Eng. Chem. Res. 53(6), 2498-2508. GWP, ODP and safety class: UNEP RTOC 2018, DCCEEW (Australian Government), IPCC AR4 (2007), IPCC AR6 (2021), Montreal Protocol, GHG Protocol (2024).
ONLINE	kelvin.engineering/refrigerants/r-744 — this table in kPa absolute, and the P–h diagram kelvin.engineering/tools/superheat-subcooling?r=r-744 — superheat and subcooling calculator
VERIFY	These figures must be verified by a qualified professional before they're relied on.