

R-170 pressure–temperature chart

Ethane — a natural refrigerant. Also written R170. Saturation pressure from −70 to 30 °C, every 2 K, in kPa gauge and bar gauge, computed with CoolProp.

SAFETY CLASS A3 Lower toxicity, higher flammability	GWP, 100-YEAR 0.437 (AR6) IPCC AR6; not listed in AR4	ODP 0 Montreal Protocol
CRITICAL POINT 32.17 °C · 4,872.2 kPa abs CoolProp, from its equation of state	NORMAL BOILING POINT −88.58 °C At 101.325 kPa	

SATURATION PRESSURE			SATURATION PRESSURE			SATURATION PRESSURE		
T (°C)	kPa g	bar g	T (°C)	kPa g	bar g	T (°C)	kPa g	bar g
−70	148.6	1.49	−36	783.0	7.83	−2	2,172.0	21.72
−68	171.2	1.71	−34	840.3	8.40	0	2,285.4	22.85
−66	195.4	1.95	−32	900.3	9.00	2	2,402.9	24.03
−64	221.1	2.21	−30	963.0	9.63	4	2,524.5	25.25
−62	248.4	2.48	−28	1,028.5	10.28	6	2,650.5	26.51
−60	277.4	2.77	−26	1,096.9	10.97	8	2,780.9	27.81
−58	308.3	3.08	−24	1,168.3	11.68	10	2,915.9	29.16
−56	340.9	3.41	−22	1,242.7	12.43	12	3,055.6	30.56
−54	375.4	3.75	−20	1,320.2	13.20	14	3,200.1	32.00
−52	412.0	4.12	−18	1,400.9	14.01	16	3,349.5	33.50
−50	450.5	4.51	−16	1,485.0	14.85	18	3,504.2	35.04
−48	491.1	4.91	−14	1,572.3	15.72	20	3,664.1	36.64
−46	534.0	5.34	−12	1,663.2	16.63	22	3,829.7	38.30
−44	579.0	5.79	−10	1,757.5	17.58	24	4,001.0	40.01
−42	626.4	6.26	−8	1,855.5	18.55	26	4,178.5	41.79
−40	676.1	6.76	−6	1,957.2	19.57	28	4,362.6	43.63
−38	728.3	7.28	−4	2,062.7	20.63	30	4,553.7	45.54

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-170 — this table in kPa absolute, and the P–h diagram kelvin.engineering/tools/superheat-subcooling?r=r-170 — superheat and subcooling calculator
VERIFY	These figures must be verified by a qualified professional before they’re relied on.