

R-1270 pressure–temperature chart

Propylene (Propene) — a natural refrigerant. Also written R1270. Saturation pressure from −70 to 90 °C, every 2 K, in kPa gauge and bar gauge, computed with CoolProp.

SAFETY CLASS

A3 Lower toxicity, higher flammability	GWP, 100-YEAR under 5 Australian Government (DCCEEW)	ODP 0 Montreal Protocol
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CRITICAL POINT

91.06 °C · 4,555.0 kPa abs
CoolProp, from its equation of state

NORMAL BOILING POINT

−47.62 °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	−69.1	−0.69	−16	249.6	2.50	38	1,473.7	14.74
−68	−65.2	−0.65	−14	274.1	2.74	40	1,547.1	15.47
−66	−61.0	−0.61	−12	299.8	3.00	42	1,623.0	16.23
−64	−56.3	−0.56	−10	326.8	3.27	44	1,701.4	17.01
−62	−51.3	−0.51	−8	355.2	3.55	46	1,782.5	17.82
−60	−45.7	−0.46	−6	384.9	3.85	48	1,866.1	18.66
−58	−39.7	−0.40	−4	416.1	4.16	50	1,952.5	19.52
−56	−33.3	−0.33	−2	448.7	4.49	52	2,041.6	20.42
−54	−26.2	−0.26	0	482.8	4.83	54	2,133.5	21.34
−52	−18.7	−0.19	2	518.4	5.18	56	2,228.4	22.28
−50	−10.5	−0.11	4	555.6	5.56	58	2,326.2	23.26
−48	−1.7	−0.02	6	594.5	5.95	60	2,427.0	24.27
−46	7.7	0.08	8	635.0	6.35	62	2,530.8	25.31
−44	17.8	0.18	10	677.3	6.77	64	2,637.9	26.38
−42	28.6	0.29	12	721.3	7.21	66	2,748.2	27.48
−40	40.1	0.40	14	767.1	7.67	68	2,861.9	28.62
−38	52.5	0.52	16	814.7	8.15	70	2,978.9	29.79
−36	65.6	0.66	18	864.2	8.64	72	3,099.5	31.00
−34	79.6	0.80	20	915.7	9.16	74	3,223.7	32.24
−32	94.5	0.95	22	969.1	9.69	76	3,351.6	33.52
−30	110.3	1.10	24	1,024.6	10.25	78	3,483.4	34.83
−28	127.0	1.27	26	1,082.2	10.82	80	3,619.2	36.19
−26	144.8	1.45	28	1,141.8	11.42	82	3,759.2	37.59
−24	163.5	1.64	30	1,203.7	12.04	84	3,903.5	39.04
−22	183.4	1.83	32	1,267.7	12.68	86	4,052.5	40.53
−20	204.3	2.04	34	1,334.0	13.34	88	4,206.5	42.07
−18	226.4	2.26	36	1,402.7	14.03	90	4,366.2	43.66

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.

ONLINE

kelvin.engineering/refrigerants/r-1270 — this table in kPa absolute, and the P–h diagram
kelvin.engineering/tools/superheat-subcooling?r=r-1270 — superheat and subcooling calculator

VERIFY

These figures must be verified by a qualified professional before they're relied on.