R-455A pressure–temperature chart

Solstice L40X (CO2/R-32/1234yf) — a zeotropic blend of R-744, R-32 and R-1234yf, 3 / 21.5 / 75.5 % by mass. Also written R455A. Bubble and dew pressures from −70 to 72 °C, every 2 K, in kPa gauge and bar gauge, computed with CoolProp.

SAFETY CLASS	GWP, 100-YEAR	ODP
A2L Lower toxicity, lower flammability	**145** (AR4) · **166** (AR6) IPCC, summed from its composition	**0** Montreal Protocol

BUBBLE POINT	DEW POINT	GLIDE
−52.26 °C At 101.325 kPa	**−39.20** °C At 101.325 kPa	**13.07** K Dew less bubble, at 101.325 kPa

	BUBBLE · LIQUID		DEW · VAPOUR	
T (°C)	kPa g	bar g	kPa g	bar g
−70	−61.0	−0.61	−83.3	−0.83
−68	−56.2	−0.56	−80.8	−0.81
−66	−50.9	−0.51	−78.0	−0.78
−64	−45.1	−0.45	−74.9	−0.75
−62	−38.9	−0.39	−71.5	−0.72
−60	−32.1	−0.32	−67.7	−0.68
−58	−24.7	−0.25	−63.5	−0.64
−56	−16.7	−0.17	−59.0	−0.59
−54	−8.1	−0.08	−53.9	−0.54
−52	1.3	0.01	−48.5	−0.48
−50	11.3	0.11	−42.5	−0.42
−48	22.1	0.22	−35.9	−0.36
−46	33.7	0.34	−28.9	−0.29
−44	46.1	0.46	−21.2	−0.21
−42	59.3	0.59	−12.8	−0.13
−40	73.5	0.74	−3.8	−0.04
−38	88.6	0.89	5.9	0.06
−36	104.7	1.05	16.4	0.16
−34	121.9	1.22	27.6	0.28
−32	140.1	1.40	39.7	0.40
−30	159.4	1.59	52.7	0.53
−28	179.9	1.80	66.6	0.67
−26	201.6	2.02	81.4	0.81
−24	224.5	2.25	97.3	0.97
−22	248.7	2.49	114.2	1.14
−20	274.3	2.74	132.2	1.32
−18	301.2	3.01	151.4	1.51
−16	329.6	3.30	171.8	1.72
−14	359.4	3.59	193.4	1.93
−12	390.7	3.91	216.3	2.16
−10	423.6	4.24	240.6	2.41
−8	458.1	4.58	266.2	2.66
−6	494.3	4.94	293.4	2.93
−4	532.2	5.32	322.0	3.22
−2	571.8	5.72	352.2	3.52
0	613.3	6.13	384.1	3.84
2	656.5	6.57	417.6	4.18
4	701.7	7.02	452.9	4.53
6	748.8	7.49	490.0	4.90
8	797.9	7.98	528.9	5.29
10	849.1	8.49	569.8	5.70
12	902.3	9.02	612.7	6.13
14	957.7	9.58	657.6	6.58
16	1,015.3	10.15	704.7	7.05
18	1,075.1	10.75	754.0	7.54
20	1,137.2	11.37	805.5	8.06
22	1,201.6	12.02	859.4	8.59
24	1,268.4	12.68	915.8	9.16
26	1,337.6	13.38	974.6	9.75
28	1,409.4	14.09	1,036.0	10.36
30	1,483.6	14.84	1,100.1	11.00
32	1,560.4	15.60	1,166.9	11.67
34	1,639.9	16.40	1,236.5	12.37
36	1,722.1	17.22	1,309.1	13.09
38	1,806.9	18.07	1,384.7	13.85
40	1,894.6	18.95	1,463.4	14.63
42	1,985.0	19.85	1,545.4	15.45
44	2,078.4	20.78	1,630.7	16.31
46	2,174.6	21.75	1,719.4	17.19
48	2,273.8	22.74	1,811.7	18.12
50	2,376.0	23.76	1,907.7	19.08
52	2,481.2	24.81	2,007.6	20.08
54	2,589.5	25.90	2,111.5	21.11
56	2,700.9	27.01	2,219.5	22.20
58	2,815.5	28.15	2,331.9	23.32
60	2,933.2	29.33	2,448.8	24.49
62	3,054.0	30.54	2,570.5	25.71
64	3,178.1	31.78	2,697.2	26.97
66	3,305.2	33.05	2,829.3	28.29
68	3,435.5	34.35	2,967.0	29.67
70	3,568.8	35.69	3,110.9	31.11
72	3,704.9	37.05	3,261.4	32.61

NOTES

Gauge pressure is absolute pressure less a standard atmosphere, 101.325 kPa; below it, gauge pressure is negative.
Bubble: saturated liquid — read subcooling from it. Dew: saturated vapour — read superheat from it.
CoolProp could not solve the bubble line at 74–84 °C. Those rows are left out, not interpolated.

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, safety class and composition: UNEP RTOC 2018, DCCEEW (Australian Government), IPCC AR4 (2007), IPCC AR6 (2021), Montreal Protocol, ASHRAE refrigerant designations, GHG Protocol (2024).

ONLINE

kelvin.engineering/refrigerants/r-455a — this table in kPa absolute, and the P–h diagram
kelvin.engineering/tools/superheat-subcooling?r=r-455a — superheat and subcooling calculator

VERIFY

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