R-507A pressure–temperature chart

R-125/143a (50/50) — an azeotropic blend of R-125 and R-143a, 50 / 50 % by mass. Also written R507A. Bubble and dew pressures from −70 to 68 °C, every 2 K, in kPa gauge and bar gauge, computed with CoolProp.

SAFETY CLASS	GWP, 100-YEAR	ODP
A1 Lower toxicity, no flame propagation	**3,985** (AR4) · **4,775** (AR6) IPCC, summed from its composition	**0** Montreal Protocol

CRITICAL POINT	BUBBLE POINT	DEW POINT	GLIDE
70.62 °C · **3,704.9** kPa abs CoolProp, from its equation of state	**−46.74** °C At 101.325 kPa	**−46.74** °C At 101.325 kPa	**0.00** K Dew less bubble, at 101.325 kPa

	BUBBLE · LIQUID		DEW · VAPOUR	
T (°C)	kPa g	bar g	kPa g	bar g
−70	−73.0	−0.73	−73.0	−0.73
−68	−69.2	−0.69	−69.3	−0.69
−66	−65.1	−0.65	−65.2	−0.65
−64	−60.6	−0.61	−60.6	−0.61
−62	−55.7	−0.56	−55.7	−0.56
−60	−50.3	−0.50	−50.3	−0.50
−58	−44.3	−0.44	−44.4	−0.44
−56	−37.9	−0.38	−37.9	−0.38
−54	−30.9	−0.31	−30.9	−0.31
−52	−23.2	−0.23	−23.2	−0.23
−50	−14.9	−0.15	−15.0	−0.15
−48	−6.0	−0.06	−6.0	−0.06
−46	3.7	0.04	3.7	0.04
−44	14.1	0.14	14.1	0.14
−42	25.3	0.25	25.3	0.25
−40	37.4	0.37	37.3	0.37
−38	50.3	0.50	50.2	0.50
−36	64.1	0.64	64.1	0.64
−34	78.9	0.79	78.9	0.79
−32	94.7	0.95	94.7	0.95
−30	111.6	1.12	111.5	1.12
−28	129.5	1.30	129.4	1.29
−26	148.6	1.49	148.5	1.49
−24	168.9	1.69	168.8	1.69
−22	190.4	1.90	190.3	1.90
−20	213.2	2.13	213.1	2.13
−18	237.3	2.37	237.2	2.37
−16	262.8	2.63	262.7	2.63
−14	289.8	2.90	289.6	2.90
−12	318.2	3.18	318.0	3.18
−10	348.2	3.48	348.0	3.48
−8	379.8	3.80	379.5	3.79
−6	413.0	4.13	412.7	4.13
−4	447.9	4.48	447.6	4.48
−2	484.6	4.85	484.2	4.84

	BUBBLE · LIQUID		DEW · VAPOUR	
T (°C)	kPa g	bar g	kPa g	bar g
0	523.1	5.23	522.6	5.23
2	563.4	5.63	563.0	5.63
4	605.7	6.06	605.2	6.05
6	650.0	6.50	649.4	6.49
8	696.3	6.96	695.7	6.96
10	744.7	7.45	744.0	7.44
12	795.3	7.95	794.6	7.95
14	848.1	8.48	847.3	8.47
16	903.2	9.03	902.4	9.02
18	960.6	9.61	959.8	9.60
20	1,020.5	10.20	1,019.6	10.20
22	1,082.9	10.83	1,081.9	10.82
24	1,147.8	11.48	1,146.7	11.47
26	1,215.3	12.15	1,214.2	12.14
28	1,285.6	12.86	1,284.4	12.84
30	1,358.6	13.59	1,357.4	13.57
32	1,434.5	14.35	1,433.2	14.33
34	1,513.3	15.13	1,511.9	15.12
36	1,595.1	15.95	1,593.7	15.94
38	1,680.1	16.80	1,678.5	16.79
40	1,768.2	17.68	1,766.5	17.67
42	1,859.6	18.60	1,857.9	18.58
44	1,954.3	19.54	1,952.5	19.53
46	2,052.5	20.53	2,050.7	20.51
48	2,154.4	21.54	2,152.4	21.52
50	2,259.9	22.60	2,257.9	22.58
52	2,369.2	23.69	2,367.2	23.67
54	2,482.5	24.82	2,480.4	24.80
56	2,599.8	26.00	2,597.8	25.98
58	2,721.5	27.21	2,719.5	27.19
60	2,847.6	28.48	2,845.6	28.46
62	2,978.3	29.78	2,976.4	29.76
64	3,114.0	31.14	3,112.3	31.12
66	3,254.9	32.55	3,253.5	32.53
68	3,401.5	34.02	3,400.5	34.01

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.

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-507a — this table in kPa absolute, and the P–h diagram
kelvin.engineering/tools/superheat-subcooling?r=r-507a — superheat and subcooling calculator

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