

Tabelle di saturazione di R134a

T (°C)	P (MPa)	liquido saturo			vapore saturo			liquido saturo			vapore saturo			liquido saturo			vapore saturo		
		v_L (m ³ /kg)	v_L-v_V (m ³ /kg)	v_V (m ³ /kg)	u_L (kJ/kg)	u_V (kJ/kg)	h_L (kJ/kg)	h_L-h_V (kJ/kg)	h_V (kJ/kg)	s_L (kJ/kgK)	s_L-s_V (kJ/kgK)	s_V (kJ/kgK)							
-50.0	0.02945	0.00069	0.60551	0.6062	-30.16	184.0	-30.14	231.94	201.8	-0.128	1.0395	0.9115							
-47.5	0.03401	0.00069	0.52911	0.5298	-27.06	185.4	-27.03	230.43	203.4	-0.1142	1.0213	0.9071							
-45.0	0.03912	0.00070	0.464	0.4647	-23.95	186.8	-23.92	228.92	205	-0.1005	1.0034	0.9029							
-42.5	0.04483	0.00070	0.4083	0.409	-20.83	188.3	-20.8	227.4	206.6	-0.08693	0.98593	0.899							
-40.0	0.05121	0.00071	0.36039	0.3611	-17.70	189.7	-17.67	225.87	208.2	-0.07344	0.96874	0.8953							
-37.5	0.05829	0.00071	0.31909	0.3198	-14.56	191.1	-14.52	224.32	209.8	-0.06004	0.95184	0.8918							
-35.0	0.06614	0.00071	0.28329	0.284	-11.41	192.6	-11.37	222.77	211.4	-0.04675	0.93525	0.8885							
-32.5	0.07482	0.00072	0.25228	0.253	-8.25	194.0	-8.198	221.098	212.9	-0.03354	0.91894	0.8854							
-30.0	0.08438	0.00072	0.22518	0.2259	-5.08	195.4	-5.018	219.518	214.5	-0.02042	0.90282	0.8824							
-27.5	0.09488	0.00072	0.20158	0.2023	-1.90	196.9	-1.826	217.926	216.1	-0.00739	0.88709	0.8797							
-25.0	0.1064	0.00073	0.18087	0.1816	1.30	198.3	1.378	216.222	217.6	0.00555	0.87145	0.877							
-22.5	0.119	0.00073	0.16267	0.1634	4.51	199.7	4.595	214.605	219.2	0.01841	0.85619	0.8746							
-20.0	0.1327	0.00074	0.14666	0.1474	7.73	201.2	7.826	212.874	220.7	0.0312	0.8411	0.8723							
-17.5	0.1477	0.00074	0.13246	0.1332	10.96	202.6	11.07	211.23	222.3	0.04391	0.82619	0.8701							
-15.0	0.1639	0.00074	0.11996	0.1207	14.21	204.0	14.33	209.47	223.8	0.05654	0.81146	0.868							
-12.5	0.1816	0.00075	0.10875	0.1095	17.46	205.5	17.6	207.7	225.3	0.0691	0.797	0.8661							
-10.0	0.2006	0.00075	0.09884	0.09959	20.74	206.9	20.89	206.01	226.9	0.0816	0.7827	0.8643							
-7.5	0.2212	0.00076	0.08997	0.09073	24.02	208.3	24.19	204.21	228.4	0.09403	0.76857	0.8626							
-5.0	0.2433	0.00076	0.08204	0.0828	27.32	209.7	27.51	202.29	229.8	0.1064	0.7546	0.861							
-2.5	0.2672	0.00077	0.07492	0.07569	30.63	211.1	30.84	200.46	231.3	0.1187	0.7408	0.8595							
0.0	0.2928	0.00077	0.06854	0.06931	33.96	212.5	34.19	198.61	232.8	0.131	0.727	0.858							
2.5	0.3203	0.00078	0.06278	0.06356	37.31	213.9	37.56	196.64	234.2	0.1431	0.7136	0.8567							
5.0	0.3497	0.00078	0.05759	0.05837	40.67	215.3	40.94	194.76	235.7	0.1553	0.7001	0.8554							
7.5	0.3811	0.00079	0.0529	0.05369	44.04	216.6	44.35	192.75	237.1	0.1674	0.6868	0.8542							
10.0	0.4146	0.00079	0.04865	0.04944	47.44	218.0	47.77	190.73	238.5	0.1794	0.6737	0.8531							
12.5	0.4503	0.00080	0.04479	0.04559	50.85	219.4	51.21	188.69	239.9	0.1914	0.6606	0.852							
15.0	0.4884	0.00080	0.04129	0.04209	54.28	220.7	54.67	186.63	241.3	0.2034	0.6475	0.8509							
17.5	0.5288	0.00081	0.03809	0.0389	57.72	222.0	58.15	184.45	242.6	0.2153	0.6346	0.8499							
20.0	0.5717	0.00082	0.03518	0.036	61.19	223.4	61.66	182.24	243.9	0.2272	0.6218	0.849							
22.5	0.6172	0.00082	0.03252	0.03334	64.68	224.7	65.18	180.02	245.2	0.239	0.6091	0.8481							
25.0	0.6654	0.00083	0.03008	0.03091	68.18	226.0	68.74	177.76	246.5	0.2509	0.5963	0.8472							
27.5	0.7163	0.00084	0.02785	0.02869	71.71	227.2	72.31	175.49	247.8	0.2627	0.5836	0.8463							
30.0	0.7702	0.00084	0.0258	0.02664	75.26	228.5	75.91	173.09	249	0.2745	0.5709	0.8454							
32.5	0.827	0.00085	0.02391	0.02476	78.84	229.7	79.54	170.66	250.2	0.2862	0.5584	0.8446							
35.0	0.887	0.00086	0.02217	0.02303	82.44	230.9	83.2	168.2	251.4	0.298	0.5457	0.8437							
37.5	0.9501	0.00086	0.02058	0.02144	86.06	232.1	86.88	165.62	252.5	0.3097	0.5332	0.8429							
40.0	1.017	0.00087	0.0191	0.01997	89.71	233.3	90.6	163	253.6	0.3214	0.5206	0.842							
42.5	1.086	0.00088	0.01772	0.0186	93.39	234.5	94.35	160.35	254.7	0.3332	0.5079	0.8411							
45.0	1.16	0.00089	0.01645	0.01734	97.10	235.6	98.13	157.57	255.7	0.3449	0.4953	0.8402							
47.5	1.237	0.00090	0.01527	0.01617	100.8	236.7	102	154.7	256.7	0.3566	0.4826	0.8392							
50.0	1.318	0.00091	0.01418	0.01509	104.6	237.7	105.8	151.8	257.6	0.3684	0.4698	0.8382							
52.5	1.403	0.00092	0.01316	0.01408	108.4	238.8	109.7	148.8	258.5	0.3802	0.4569	0.8371							
55.0	1.492	0.00093	0.01221	0.01314	112.3	239.7	113.7	145.6	259.3	0.392	0.444	0.836							
57.5	1.584	0.00094	0.01132	0.01226	116.2	240.7	117.7	142.4	260.1	0.4039	0.4308	0.8347							
60.0	1.682	0.00095	0.01049	0.01144	120.1	241.6	121.7	139.1	260.8	0.4158	0.4176	0.8334							
62.5	1.784	0.00096	0.00972	0.01068	124.1	242.4	125.8	135.7	261.5	0.4277	0.4042	0.8319							
65.0	1.89	0.00097	0.00899	0.00996	128.1	243.2	130	132	262	0.4398	0.3905	0.8303							
67.5	2.001	0.00099	0.0083	0.00929	132.2	243.9	134.2	128.3	262.5	0.4519	0.3766	0.8285							
70.0	2.117	0.00100	0.00765	0.00865	136.3	244.5	138.5	124.3	262.8	0.4641	0.3625	0.8266							
72.5	2.238	0.00102	0.00704	0.00806	140.6	245.1	142.8	120.3	263.1	0.4765	0.3479	0.8244							
75.0	2.364	0.00104	0.00645	0.00749	144.9	245.5	147.3	115.9	263.2	0.489	0.3329	0.8219							
77.5	2.496	0.00106	0.0059	0.00696	149.3	245.8	151.9	111.3	263.2	0.5017	0.3174	0.8191							
80.0	2.633	0.00108	0.00537	0.00645	153.7	246.0	156.6	106.4	263	0.5146	0.3013	0.8159							
82.5	2.776	0.00110	0.00486	0.00596	158.4	246.0	161.4	101.2	262.6	0.5278	0.2845	0.8123							
85.0	2.926	0.00113	0.00437	0.0055	163.1	245.9	166.4	95.5	261.9	0.5413	0.2668	0.8081							
87.5	3.082	0.00116	0.00389	0.00505	168.1	245.4	171.6	89.4	261	0.5553	0.2478	0.8031							
90.0	3.244	0.00119	0.00342	0.00461	173.2	244.6	177.1	82.5	259.6	0.57	0.2271	0.7971							
92.5	3.414	0.00124	0.00294	0.00418	178.8	243.4	183	74.7	257.7	0.5855	0.2042	0.7897							
95.0	3.591	0.00129	0.00245	0.00374	184.8	241.4	189.4	65.5	254.9	0.6025	0.1777	0.7802							
97.5	3.777	0.00138	0.0019	0.00328	191.7	238.1	196.9	53.6	250.5	0.6221	0.1446	0.7667							
100.0	3.972	0.00154	0.00114	0.00268	201.4	231.2	207.5	34.4	241.9	0.6497	0.0922	0.7419							

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P (MPa)	T (°C)	liquido saturo		vapore saturo		liquido saturo		vapore saturo		liquido saturo		vapore saturo	
		v_L (m ³ /kg)	v_L-v_v (m ³ /kg)	v_v (m ³ /kg)	u_L (kJ/kg)	u_v (kJ/kg)	h_L (kJ/kg)	h_L-h_v (kJ/kg)	h_v (kJ/kg)	s_L (kJ/kgK)	s_L-s_v (kJ/kgK)	s_v (kJ/kgK)	
0.03	-49.68	0.00069	0.59511	0.5958	-29.76	184.2	-29.74	231.74	202.0	-0.1263	1.0373	0.911	
0.04	-44.60	0.0007	0.4544	0.4551	-23.45	187.1	-23.42	228.72	205.3	-0.09832	1.00062	0.9023	
0.05	-40.45	0.0007	0.3686	0.3693	-18.27	189.4	-18.24	226.14	207.9	-0.07588	0.97178	0.8959	
0.06	-36.93	0.00071	0.31049	0.3112	-13.85	191.5	-13.81	223.91	210.1	-0.05703	0.94803	0.891	
0.07	-33.86	0.00071	0.26859	0.2693	-9.97	193.2	-9.92	222.02	212.1	-0.0407	0.9277	0.887	
0.08	-31.12	0.00072	0.23688	0.2376	-6.496	194.8	-6.438	220.238	213.8	-0.02626	0.90996	0.8837	
0.09	-28.63	0.00072	0.21188	0.2126	-3.34	196.2	-3.275	218.675	215.4	-0.01329	0.89419	0.8809	
0.10	-26.36	0.00073	0.19187	0.1926	-0.4409	197.5	-0.3683	217.1683	216.8	-0.00149	0.87989	0.8784	
0.11	-24.26	0.00073	0.17527	0.176	2.245	198.7	2.326	215.774	218.1	0.00935	0.86695	0.8763	
0.12	-22.31	0.00073	0.16137	0.1621	4.753	199.9	4.841	214.459	219.3	0.01939	0.85501	0.8744	
0.13	-20.48	0.00074	0.14956	0.1503	7.108	200.9	7.203	213.197	220.4	0.02874	0.84396	0.8727	
0.14	-18.76	0.00074	0.13936	0.1401	9.33	201.9	9.433	212.067	221.5	0.03751	0.83369	0.8712	
0.15	-17.13	0.00074	0.13056	0.1313	11.44	202.8	11.55	210.95	222.5	0.04577	0.82403	0.8698	
0.16	-15.59	0.00074	0.12276	0.1235	13.44	203.7	13.56	209.94	223.5	0.05358	0.81492	0.8685	
0.18	-12.71	0.00075	0.10965	0.1104	17.19	205.3	17.32	207.88	225.2	0.06804	0.79826	0.8663	
0.20	-10.08	0.00075	0.09913	0.09988	20.64	206.8	20.79	206.01	226.8	0.08122	0.78318	0.8644	
0.22	-7.64	0.00076	0.09043	0.09119	23.84	208.2	24.01	204.29	228.3	0.09335	0.76935	0.8627	
0.24	-5.37	0.00076	0.08315	0.08391	26.84	209.5	27.02	202.58	229.6	0.1046	0.7566	0.8612	
0.26	-3.24	0.00077	0.07693	0.0777	29.66	210.7	29.86	201.04	230.9	0.1151	0.7448	0.8599	
0.28	-1.23	0.00077	0.07159	0.07236	32.33	211.8	32.54	199.56	232.1	0.1249	0.7338	0.8587	
0.30	0.67	0.00077	0.06693	0.0677	34.86	212.9	35.09	198.11	233.2	0.1342	0.7235	0.8577	
0.32	2.48	0.00078	0.06283	0.06361	37.28	213.9	37.53	196.67	234.2	0.143	0.7137	0.8567	
0.34	4.20	0.00078	0.0592	0.05998	39.59	214.8	39.85	195.35	235.2	0.1514	0.7044	0.8558	
0.36	5.84	0.00078	0.05596	0.05674	41.8	215.7	42.08	194.12	236.2	0.1594	0.6956	0.855	
0.40	8.93	0.00079	0.05042	0.05121	45.98	217.4	46.3	191.6	237.9	0.1743	0.6792	0.8535	
0.45	12.48	0.0008	0.04482	0.04562	50.82	219.4	51.18	188.72	239.9	0.1913	0.6607	0.852	
0.50	15.73	0.00081	0.04031	0.04112	55.29	221.1	55.69	186.01	241.7	0.2069	0.6437	0.8506	
0.55	18.75	0.00081	0.0366	0.03741	59.46	222.7	59.91	183.39	243.3	0.2213	0.6282	0.8495	
0.60	21.57	0.00082	0.03348	0.0343	63.38	224.2	63.87	180.93	244.8	0.2346	0.6138	0.8484	
0.65	24.22	0.00083	0.03082	0.03165	67.08	225.6	67.62	178.48	246.1	0.2472	0.6003	0.8475	
0.70	26.71	0.00083	0.02854	0.02937	70.6	226.8	71.18	176.22	247.4	0.259	0.5876	0.8466	
0.80	31.33	0.00085	0.02477	0.02562	77.16	229.1	77.84	171.76	249.6	0.2807	0.5643	0.845	
0.90	35.53	0.00086	0.02183	0.02269	83.2	231.2	83.97	167.63	251.6	0.3004	0.5432	0.8436	
1.00	39.39	0.00087	0.01945	0.02032	88.82	233	89.69	163.71	253.4	0.3186	0.5236	0.8422	
1.10	42.97	0.00088	0.01748	0.01836	94.09	234.7	95.06	159.84	254.9	0.3354	0.5055	0.8409	
1.20	46.31	0.00089	0.01583	0.01672	99.06	236.2	100.1	156.1	256.2	0.3511	0.4886	0.8397	
1.30	49.46	0.00091	0.01441	0.01532	103.8	237.5	105	152.4	257.4	0.3658	0.4726	0.8384	
1.40	52.42	0.00092	0.01319	0.01411	108.3	238.7	109.6	148.9	258.5	0.3798	0.4574	0.8372	
1.50	55.23	0.00093	0.01213	0.01306	112.6	239.8	114	145.4	259.4	0.3931	0.4428	0.8359	
1.60	57.91	0.00094	0.01119	0.01213	116.8	240.8	118.3	141.9	260.2	0.4058	0.4287	0.8345	
1.70	60.46	0.00095	0.01035	0.0113	120.8	241.7	122.4	138.5	260.9	0.4179	0.4152	0.8331	
1.80	62.90	0.00096	0.0096	0.01056	124.7	242.5	126.4	135.1	261.5	0.4296	0.4021	0.8317	
1.90	65.23	0.00098	0.00892	0.0099	128.5	243.3	130.3	131.8	262.1	0.4409	0.3892	0.8301	
2.00	67.48	0.00099	0.0083	0.00929	132.2	243.9	134.1	128.4	262.5	0.4518	0.3767	0.8285	
2.10	69.64	0.001	0.00774	0.00874	135.8	244.4	137.9	124.9	262.8	0.4624	0.3644	0.8268	
2.20	71.73	0.00101	0.00723	0.00824	139.3	244.9	141.5	121.5	263.0	0.4727	0.3524	0.8251	
2.30	73.74	0.00103	0.00674	0.00777	142.7	245.3	145.1	118.1	263.2	0.4827	0.3405	0.8232	
2.40	75.69	0.00104	0.0063	0.00734	146.1	245.6	148.6	114.6	263.2	0.4925	0.3287	0.8212	
2.50	77.58	0.00106	0.00588	0.00694	149.4	245.8	152	111.2	263.2	0.5021	0.3169	0.819	
2.60	79.41	0.00107	0.0055	0.00657	152.7	246	155.5	107.6	263.1	0.5115	0.3052	0.8167	
2.70	81.18	0.00109	0.00513	0.00622	155.9	246.1	158.8	104	262.8	0.5208	0.2935	0.8143	
2.80	82.90	0.0011	0.00479	0.00589	159.1	246	162.2	100.3	262.5	0.5299	0.2818	0.8117	
2.90	84.58	0.00112	0.00446	0.00558	162.3	245.9	165.6	96.5	262.1	0.539	0.2698	0.8088	
3.00	86.20	0.00114	0.00414	0.00528	165.5	245.7	168.9	92.6	261.5	0.548	0.2578	0.8058	
3.10	87.79	0.00116	0.00384	0.005	168.6	245.3	172.2	88.6	260.8	0.557	0.2455	0.8025	
3.20	89.33	0.00118	0.00355	0.00473	171.8	244.9	175.6	84.4	260.0	0.566	0.2328	0.7988	
3.30	90.83	0.00121	0.00326	0.00447	175	244.3	179	80	259.0	0.5751	0.2198	0.7949	
3.40	92.30	0.00123	0.00299	0.00422	178.3	243.5	182.5	75.3	257.8	0.5842	0.2062	0.7904	
3.50	93.73	0.00126	0.00271	0.00397	181.6	242.5	186.1	70.3	256.4	0.5936	0.1918	0.7854	
3.60	95.12	0.0013	0.00242	0.00372	185.1	241.3	189.8	64.9	254.7	0.6034	0.1763	0.7797	
3.80	97.80	0.00139	0.00182	0.00321	192.7	237.6	198	51.8	249.8	0.6248	0.1398	0.7646	
4.00	100.30	0.00158	0.00098	0.00256	203.4	229.3	209.8	29.8	239.6	0.6557	0.0798	0.7355	

