Solstice® Refrigerants

Solstice® L40X (R-455A)

Solstice® L40X (R-455A): Low-GWP Solution for Commercial and Industrial Refrigeration.

R-455A is a refrigerant gas blend of HFCs and HFOs with an ultra-low GWP, below 150, which means it is not restricted by the current F-Gas regulation (2024/573) and is exempt from the Spanish fluorinated greenhouse gas tax. It is an excellent solution for commercial refrigeration systems (preservation and freezing) and industrial refrigeration.

From a thermodynamic perspective, it is a refrigerant with a similar capacity to R-404A and greater energy efficiency. In terms of safety, it is classified as an A2L refrigerant, requiring appropriate materials and charge levels for this type of safety classification.

Components / Chemical Name:	ASHRAE Code:
N/A	R-455A

Technical specifications:

0	148	A2L	POE
ODP	GWP	Safety classification	Compatible lubricants

Temperature Range: High, Medium and Low

Replacement: R-404A, R-448A, R-449A for New Equipment and Retrofit of Existing Equipment

Type of replacement: Retrofit

Applications:

- Commercial Refrigeration
- Refrigerated Transport
- Industrial Refrigeration

Packaging sizes for Solstice® L40X:

- Cylinders
- Roll Drums
- ISO Tanks

Thermodinamic properties chart:

Bubble point

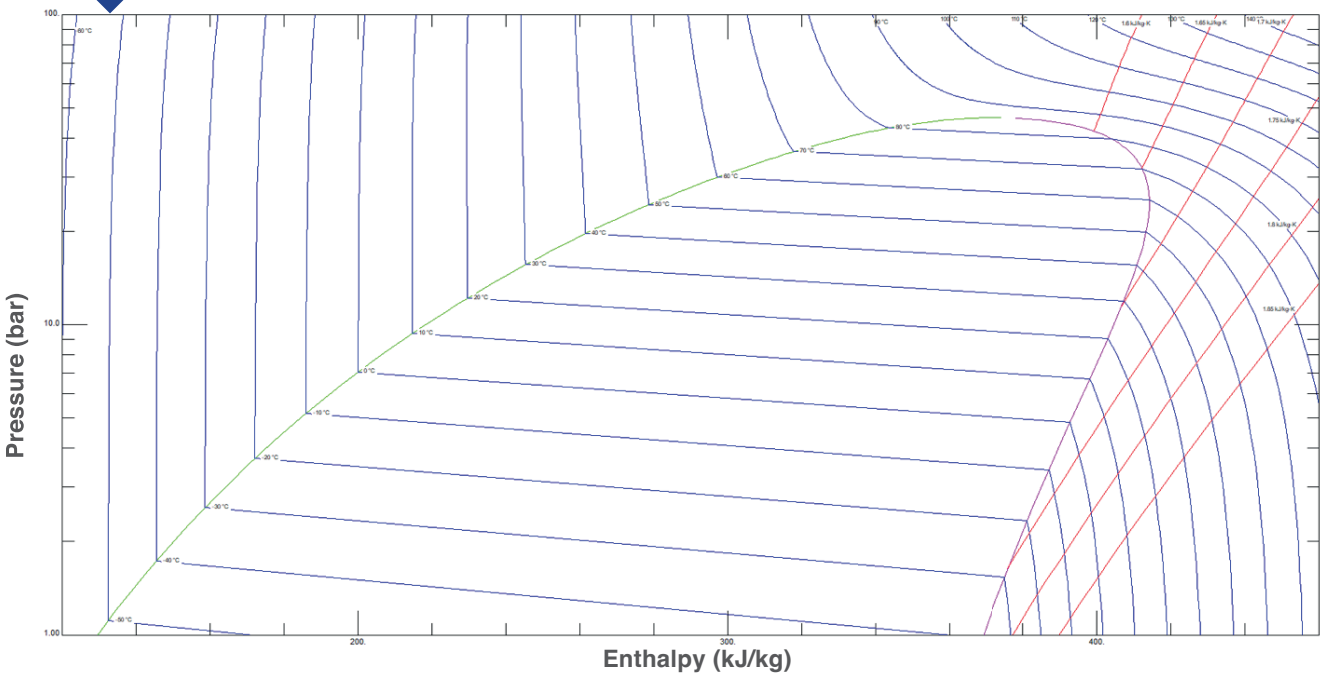
Temperature (°C)	Absolute Pressure (bar)	Liquid Density (kg/l)	Gas Density (kg/l)	Liquid Enthalpy (kJ/kg)	Gas Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg K)	Gas Entropy (kJ/kg K)
-35	1,12	1,241	0,0075	151,9	412,7	0,813	1,982
-30	1,57	1,226	0,0090	158,6	414,3	0,841	1,961
-25	2,10	1,211	0,0109	165,3	415,8	0,868	1,942
-20	2,71	1,195	0,0130	172,0	417,2	0,895	1,923
-15	3,40	1,179	0,0154	178,9	418,6	0,921	1,906
-10	4,18	1,163	0,0182	185,8	420,0	0,948	1,890
-5	5,06	1,146	0,0214	192,9	421,2	0,974	1,875
0	6,05	1,129	0,0250	200,0	422,4	1,000	1,861
5	7,15	1,111	0,0292	207,2	423,5	1,026	1,847
10	8,38	1,093	0,0338	214,6	424,4	1,052	1,834
15	9,73	1,074	0,0391	222,0	425,3	1,077	1,821
20	11,22	1,054	0,0451	229,6	426,0	1,103	1,808
25	12,85	1,033	0,0519	237,3	426,5	1,128	1,796
30	14,63	1,012	0,0597	245,2	426,9	1,154	1,784
35	16,58	0,989	0,0685	253,2	427,0	1,180	1,773
40	18,69	0,966	0,0785	261,4	426,9	1,206	1,761
45	20,97	0,940	0,0900	269,9	426,5	1,232	1,748
50	23,43	0,913	0,1034	278,6	425,7	1,258	1,736
55	26,09	0,883	0,1190	287,6	424,5	1,285	1,722
60	28,93	0,851	0,1375	297,1	422,8	1,312	1,708

Thermodinamic properties chart:

Dew point

Temperature (°C)	Absolute Pressure (bar)	Liquid Density (kg/l)	Gas Density (kg/l)	Liquid Enthalpy (kJ/kg)	Gas Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg K)	Gas Entropy (kJ/kg K)
-35	0,23	1,268	0,0057	152,5	371,9	0,785	1,759
-30	0,54	1,254	0,0070	158,6	375,0	0,812	1,752
-25	0,90	1,239	0,0086	164,9	378,1	0,838	1,745
-20	1,33	1,224	0,0104	171,2	381,1	0,864	1,740
-15	1,83	1,208	0,0126	177,7	384,1	0,890	1,734
-10	2,41	1,192	0,0150	184,2	387,0	0,915	1,729
-5	3,08	1,175	0,0178	190,9	389,9	0,941	1,725
0	3,84	1,158	0,0211	197,6	392,7	0,967	1,721
5	4,71	1,141	0,0248	204,5	395,4	0,992	1,717
10	5,69	1,123	0,0290	211,5	398,1	1,018	1,713
15	6,80	1,104	0,0338	218,7	400,6	1,043	1,709
20	8,04	1,084	0,0393	226,0	403,0	1,069	1,706
25	9,42	1,064	0,0456	233,4	405,2	1,095	1,703
30	10,96	1,043	0,0527	241,0	407,3	1,120	1,699
35	12,68	1,020	0,0608	248,7	409,2	1,146	1,695
40	14,57	0,997	0,0701	256,7	410,8	1,172	1,691
45	16,66	0,972	0,0808	264,9	412,2	1,199	1,687
50	18,97	0,945	0,0932	273,4	413,3	1,226	1,682
55	21,51	0,915	0,1078	282,2	414,0	1,253	1,676
60	24,30	0,883	0,1250	291,4	414,2	1,281	1,670

Pressure diagram chart:



Instructions:

Charge the system in liquid phase. Equipment modification is required to carry out the retrofit.

Normative:

GRIT (Gases Research Innovation & Technology) is committed to the continuous improvement of our inbuilt Quality Control, Environment and Major Accident Prevention Systems as well as close collaboration with our product and service providers. The scope of the system includes the packaging, commercialisation, storage and innovation of technical gases and the management of residual fluorinated gas and halogenated solvents.

All this work is reflected in our certificates ISO 9001 & ISO 14001. GRIT also meets AHRI 700 standard for new and recycled refrigerants.

More information:

If you want more information about our products, contact us.

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