Solstice® Refrigerants

Solstice® 449A (R-449A)

Solstice

Solstice® 449A: Direct substitute for R-404A in commercial and industrial refrigeration

R-449A is an A1 refrigerant gas blend of HFCs and HFOs designed to replace R-404A in commercial and industrial refrigeration equipment. It is also used in new equipment. R-449A is a highly versatile refrigerant used for preservation and freezing, as well as other refrigeration applications in industrial processes.

Components / Chemical Name:	ASHRAE Code:
N/A	R-449A

Technical specifications:

0	1397	A1	POE
ODP	GWP	Safety classification	Compatible lubricants

Temperature Range: High, Medium and Low

Replacement:
R-404A and R-22 via retrofit

Type of replacement:
Drop-in

Applications:

- Commercial Refrigeration
- Refrigerated Transport
- Industrial Refrigeration

Packaging sizes for Solstice® 449A:

- Cylinders
- Roll Drums
- ISO Tanks

Thermodinamic properties chart:

Bubble point

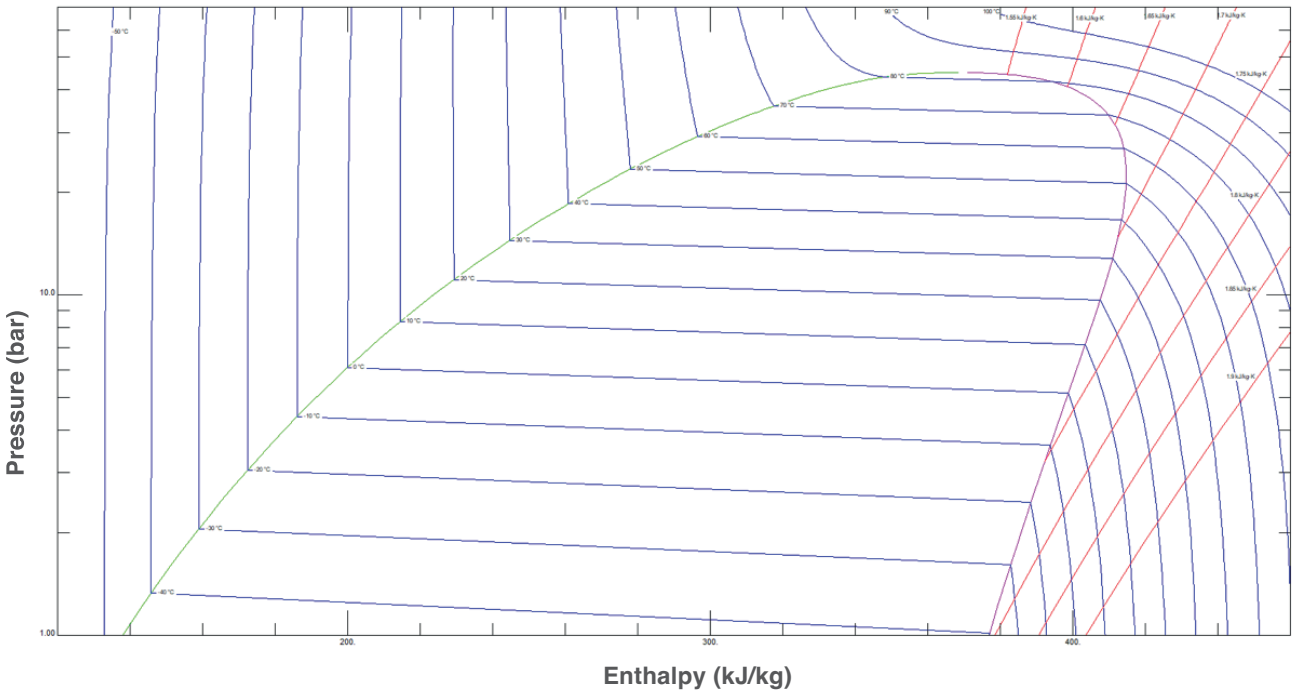
Temperature (°C)	Absolute Pressure (bar)	Liquid Density (kg/l)	Gas Density (kg/l)	Liquid Enthalpy (kJ/kg)	Gas Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg K)	Gas Entropy (kJ/kg K)
-30	1,05	1,300	0,0085	158,9	398,7	0,842	1,818
-25	1,51	1,284	0,0103	165,6	400,8	0,869	1,807
-20	2,05	1,267	0,0125	172,3	402,9	0,896	1,797
-15	2,67	1,251	0,0150	179,1	405,0	0,922	1,787
-10	3,38	1,233	0,0178	186,0	406,9	0,948	1,778
-5	4,20	1,216	0,0211	193,0	408,8	0,974	1,770
0	5,12	1,198	0,0249	200,0	410,6	1,000	1,762
5	6,16	1,179	0,0292	207,2	412,2	1,026	1,754
10	7,33	1,160	0,0341	214,4	413,8	1,051	1,747
15	8,63	1,140	0,0396	221,8	415,2	1,077	1,740
20	10,08	1,119	0,0460	229,3	416,5	1,102	1,733
25	11,69	1,097	0,0532	236,9	417,5	1,127	1,726
30	13,46	1,074	0,0615	244,7	418,4	1,153	1,719
35	15,40	1,050	0,0709	252,6	419,0	1,178	1,711
40	17,54	1,025	0,0818	260,8	419,4	1,204	1,704
45	19,87	0,998	0,0944	269,2	419,3	1,230	1,696
50	22,41	0,969	0,1091	277,9	418,9	1,256	1,687
55	25,17	0,937	0,1265	286,9	418,0	1,283	1,677
60	29,16	0,901	0,1475	296,4	416,4	1,310	1,666

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)
-30	0,61	1,324	0,0074	160,1	382,7	0,846	1,774
-25	1,00	1,307	0,0091	166,5	385,6	0,872	1,767
-20	1,46	1,290	0,0110	173,0	388,3	0,898	1,759
-15	1,99	1,273	0,0133	179,6	391,0	0,924	1,753
-10	2,61	1,256	0,0160	186,3	393,7	0,950	1,747
-5	3,33	1,238	0,0190	193,1	396,2	0,976	1,741
0	4,14	1,219	0,0225	199,9	398,7	1,001	1,735
5	5,07	1,200	0,0266	206,9	401,1	1,026	1,730
10	6,13	1,181	0,0312	213,9	403,3	1,051	1,725
15	7,31	1,161	0,0364	221,1	405,5	1,076	1,720
20	8,64	1,140	0,0425	228,4	407,4	1,101	1,716
25	10,12	1,118	0,0493	235,8	409,2	1,126	1,711
30	11,77	1,095	0,0572	243,4	410,9	1,151	1,706
35	13,60	1,071	0,0662	251,2	412,3	1,176	1,701
40	15,63	1,045	0,0765	259,2	413,4	1,201	1,695
45	17,86	1,018	0,0885	267,4	414,2	1,227	1,689
50	20,32	0,989	0,1026	275,9	414,7	1,252	1,682
55	23,02	0,957	0,1191	284,7	414,6	1,279	1,675
60	26,99	0,922	0,1390	294,0	414,0	1,306	1,666

Pressure diagram chart:



Instructions:

Charge the system in liquid phase. When replacing HCFCs, an oil change is required. For the retrofit, adjustment of the expansion valve may be necessary, or replacement with a more suitable valve depending on the application.

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.

EUROPE — GRIT, Gases Research Innovation & Technology

BARCELONA

Our plant:
P. I. "El Punsic", parcela 8.3,
08279 Avinyó, Barcelona. Spain.

Our office:
Avda. Diagonal 403, 6º 3ª
08008 Barcelona. Spain.

Phone: (+34) 932 721 400
E-mail: grit@grit.es
Website: www.gasesgrit.com

USA — Summit Refrigerants

HOUSTON

8541 East North Belt
Humble, Texas 77396

Phone: (+1) 281-540-2653
Toll-Free: (+1) 866-971-2653
Fax: (+1) 281-540-0385

DALLAS

2080 McDaniel Drive
Suite 200
Carrollton, Texas 75006

Phone: (+1) 469-458-3195
Fax: (+1) 469-458-3085

BATON ROUGE

10080 Industriplex Avenue
Gonzales, LA 70737

Phone: (+1) 225-744-2653
Fax: (+1) 225-677-6106