Solstice® Refrigerants

Solstice® 452A (R-452A)

Solstice

Solstice® 452A: Low-GWP solution for commercial and industrial refrigeration

R-452A is an A1 refrigerant blend of HFCs and HFOs designed to replace (drop-in) R-404A and R-507A in both new and existing installations. Its main applications are in commercial and industrial refrigeration as well as in refrigerated transport.

Components / Chemical Name:	ASHRAE Code:
N/A	R-452A

Technical specifications:

0	2140	A1	POE
ODP	GWP	Safety classification	Compatible lubricants

Temperature Range: Medium and Low

Replacement: R-404A/R-507A in New or Existing Equipment

Type of replacement: Drop-in

Applications:

- Commercial Refrigeration
- Industrial Refrigeration
- Refrigerated Transport

Packaging sizes for Solstice® 454C:

- Cylinders
- Roll Drums
- ISO Tanks

Thermodinamic properties chart:

Bubble point

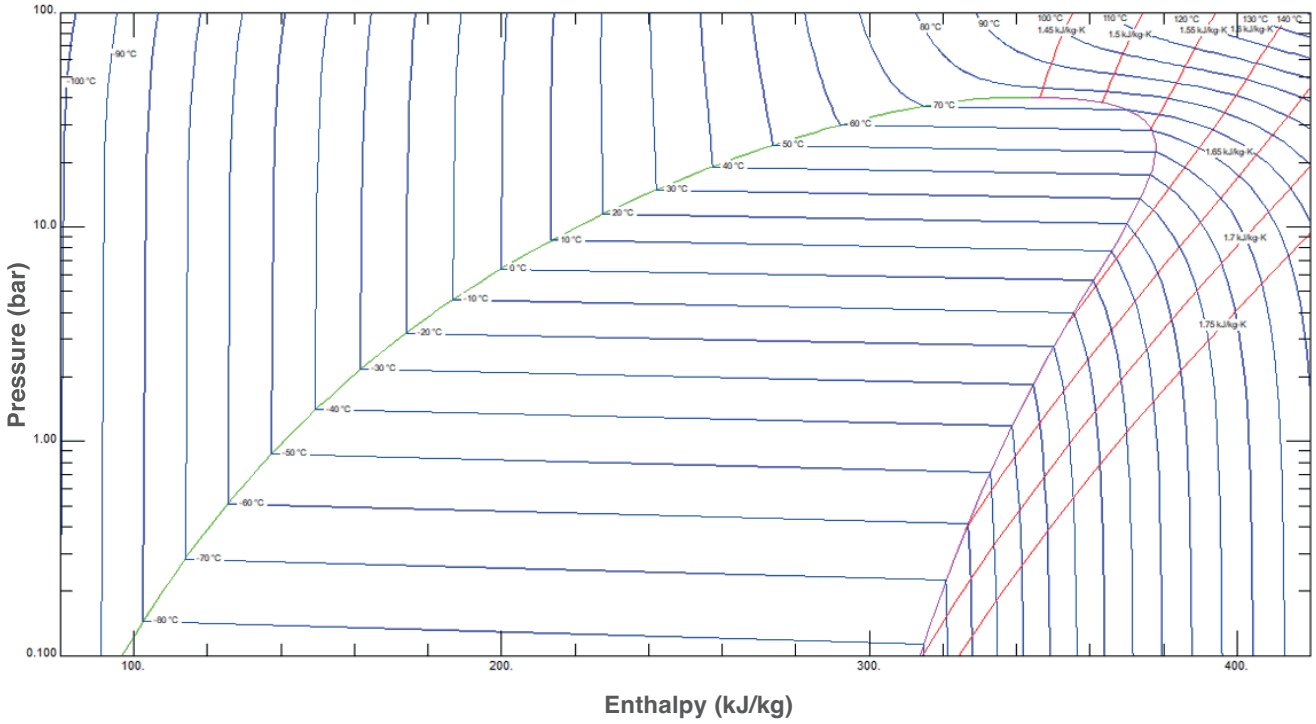
Temperature (°C)	Absolute Pressure (bar)	Liquid Density (kg/l)	Gas Density (kg/l)	Liquid Enthalpy (kJ/kg)	Gas Enthalpy (kJ/kg)	Liquid Entropy (kJ/kg K)	Gas Entropy (kJ/kg K)
-30	2,16	1,348	0,0111	161,6	353,8	0,853	1,644
-25	2,64	1,331	0,0135	167,8	356,3	0,878	1,638
-20	3,20	1,313	0,0162	174,1	358,7	0,902	1,633
-15	3,85	1,295	0,0194	180,4	361,0	0,927	1,627
-10	4,59	1,276	0,0231	186,9	363,3	0,952	1,623
-50	5,43	1,257	0,0273	193,4	365,5	0,976	1,618
0	6,38	1,237	0,0321	200,0	367,6	1,000	1,614
50	7,45	1,216	0,0376	206,7	369,6	1,024	1,610
10	8,65	1,195	0,0439	213,5	371,5	1,048	1,607
15	9,99	1,173	0,0510	220,5	373,3	1,072	1,603
20	1,15	1,150	0,0592	227,5	374,9	1,096	1,599
25	1,31	1,126	0,0685	234,7	376,3	1,120	1,595
30	1,49	1,100	0,0793	242,1	377,5	1,144	1,591
35	1,69	1,073	0,0916	249,7	378,5	1,168	1,586
40	1,91	1,043	0,1059	257,5	379,1	1,192	1,581
45	2,14	1,012	0,1227	265,5	379,4	1,217	1,576
50	2,40	0,977	0,1427	273,9	379,3	1,242	1,569
55	2,68	0,938	0,1669	282,7	378,5	1,268	1,561
60	2,99	0,892	0,1973	292,1	376,9	1,296	1,551

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	1,84	1,335	0,0101	162,0	344,5	0,850	1,612
-25	2,26	1,319	0,0122	168,1	347,4	0,874	1,608
-20	2,76	1,302	0,0148	174,2	350,2	0,899	1,604
-15	3,33	1,286	0,0178	180,5	353,0	0,924	1,601
-10	4,00	1,268	0,0212	186,8	355,7	0,948	1,599
-50	4,76	1,250	0,0251	193,2	358,3	0,972	1,596
0	5,62	1,232	0,0297	199,7	360,9	0,996	1,594
50	6,61	1,213	0,0348	206,3	363,4	1,020	1,592
10	7,71	1,193	0,0407	213,0	365,7	1,044	1,590
15	8,95	1,172	0,0475	219,9	368,0	1,068	1,588
20	1,03	1,150	0,0552	226,8	370,1	1,091	1,586
25	1,19	1,127	0,0641	233,9	372,0	1,115	1,584
30	1,36	1,103	0,0742	241,2	373,8	1,139	1,581
35	1,55	1,077	0,0860	248,6	375,3	1,163	1,578
40	1,76	1,049	0,0996	256,3	376,5	1,187	1,575
45	1,99	1,019	0,1156	264,2	377,4	1,212	1,571
50	2,24	0,985	0,1346	272,5	377,8	1,237	1,566
55	2,52	0,947	0,1576	281,1	377,7	1,263	1,560
60	2,82	0,904	0,1865	290,4	376,7	1,290	1,551

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