Refrigerants RS Series

R-470B (RS51)

REFRIGERANT SOLUTIONS LTD
RS SERIES
ZERO ODP
DROP-IN
REFRIGERANT

R-470B: HIGH SECURITY SUBSTITUTE FOR R-404A AND R-507A WITH LOWER GWP.

RS-51 is a refrigerant gas blend of HFCs and HFOs designed to replace R-404A and R-507 with the lowest GWP on the market, being a non-flammable and non-toxic high safety refrigerant, with a cooling capacity and energy efficiency similar to R-404A substitutes of safety group A1.

Because its GWP is approximately 80% lower than R404A and 45% lower than R448A and R449A, the tax on fluorinated gases that applies to this product is the lowest of the high safety refrigerants (group A1).

Commercial brand:	ASHRAE Code:
RS-51	R-470B

Technical specifications:

0	746	A1	POE
ODP	GWP	Safety classification	Compatible lubricants

Temperature Range: High and medium.

Replacement: R-404A, R-507A.

Type of replacement: Direct Drop-in

Applications:

- Commercial refrigeration
- Industrial refrigeration

Packaging sizes for R-470B (RS51):

- Cylinders
- Roll drums
- Isotanks

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.

Thermodinamic properties chart:

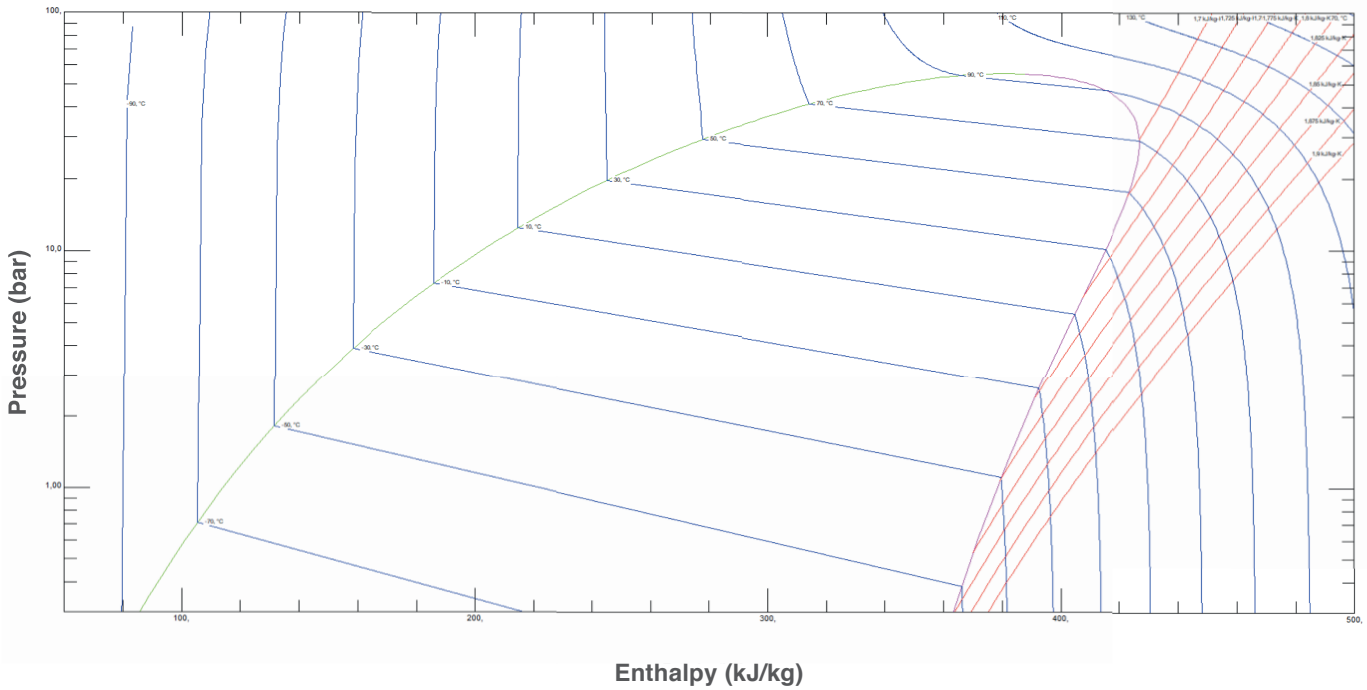
Bubble point

Temperature (°C)	Absolute pressure (bar)	Liquid density (kg/l)	Gas density (kg/l)	Liquid enthalpy (kJ/kg)	Gas enthalpy (kJ/kg)
-80	0,40765	1463	1,2847	92,288	408,13
-75	0,54225	1448,8	1,688	98,765	410,09
-70	0,70959	1434,5	2,1849	105,26	411,99
-65	0,91477	1420,1	2,7897	111,77	413,81
-60	1,1631	1405,6	3,5179	118,31	415,56
-55	1,4602	1390,9	4,3859	124,87	417,24
-50	1,8119	1376,1	5,4115	131,47	418,85
-45	2,2241	1361	6,6138	138,1	420,39
-40	2,7028	1345,8	8,013	144,77	421,87
-35	3,2543	1330,4	9,6312	151,48	423,27
-30	3,8846	1314,7	11,492	158,24	424,61
-25	4,6001	1298,8	13,621	165,05	425,87
-20	5,4068	1282,6	16,045	171,91	427,06
-15	6,311	1266	18,796	178,83	428,18
-10	7,3186	1249,1	21,907	185,82	429,22
-5	8,4357	1231,8	25,414	192,87	430,17
0	9,668	1214,1	29,359	200	431,04
5	11,021	1195,9	33,788	207,21	431,81
10	12,501	1177,2	38,754	214,51	432,49
15	14,112	1157,8	44,316	221,91	433,06
20	15,859	1137,8	50,544	229,41	433,52
25	17,748	1117,1	57,519	237,04	433,84
30	19,783	1095,5	65,335	244,78	434,03
35	21,966	1072,8	74,109	252,68	434,06
40	24,302	1049,1	83,979	260,73	433,91
45	26,793	1024	95,12	268,96	433,55
50	29,44	997,27	107,75	277,4	432,96

Dew point

Temperature (ºC)	Absolute pressure (bar)	Liquid density (kg/l)	Gas density (kg/l)	Liquid enthalpy (kJ/kg)	Gas enthalpy (kJ/kg)
-80	0,047186	1488,2	0,26219	100,22	346,08
-75	0,070649	1475,1	0,38312	106,14	349,39
-70	0,10324	1461,9	0,54692	112,09	352,73
-65	0,14756	1448,6	0,76432	118,07	356,08
-60	0,20663	1435,2	1,0476	124,07	359,44
-55	0,28398	1421,8	1,4105	130,1	362,8
-50	0,38359	1408,1	1,8685	136,17	366,17
-45	0,50996	1394,4	2,4387	142,28	369,53
-40	0,66808	1380,4	3,1397	148,42	372,88
-35	0,86343	1366,3	3,9922	154,61	376,21
-30	1,102	1351,9	5,0183	160,84	379,52
-25	1,3903	1337,3	6,2425	167,13	382,8
-20	1,7352	1322,4	7,6912	173,47	386,05
-15	2,1443	1307,3	9,3933	179,86	389,26
-10	2,6253	1291,8	11,38	186,32	392,42
-5	3,1868	1275,9	13,687	192,85	395,52
0	3,8376	1259,7	16,352	199,45	398,57
5	4,5871	1243	19,418	206,13	401,54
10	5,4454	1225,8	22,934	212,89	404,44
15	6,4231	1208	26,953	219,74	407,25
20	7,5312	1189,7	31,539	226,7	409,95
25	8,7818	1170,6	36,765	233,76	412,55
30	10,188	1150,7	42,714	240,95	415,01
35	11,762	1130	49,49	248,28	417,33
40	13,521	1108,1	57,215	255,76	419,47
45	15,48	1085	66,04	263,41	421,42
50	17,658	1060,5	76,157	271,26	423,15

Pressure diagram chart:



Instructions:

Use the liquid phase of the system for the charge. Oil change is not required. For making the conversion an adjustment on the expansion valve could be required. Some applications may require a change of the expansion valve. In case an electronic valve is used Antoine coeficients can be used to adjust the system. On the trials carried with capillary tube systems, the expansion conditions were not modified.

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:
C/ Consell de Cent 419, Pral 1ª y 2ª,
08009, 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