

## The refrigerant used in home air conditioning

KrioNext® 407C is a zeotropic ternary mixture composed of HFC-32/HFC-125/HFC-134a. It has been developed as a replacement for R-22 (HFC-22). KrioNext® 407C is a non ozone depleting refrigerant and lends itself to many uses in refrigeration and air conditioning systems.

KrioNext® 407C is a zeotropic ternary mixture that, unlike azeotropic fluid, changes its temperature during evaporation and condensation phases, for a given value of pressure. KrioNext® 407C has a moderate T° Glide (5÷7 °C). Therefore it is very important that KrioNext® 407C is transferred only as a liquid state when charging a system, and not as a vapour state. That would cause a change in the composition of the refrigerant, which could damage the plant.



Physical Properties	UM	Kryon® 407C
Composition	% by weight	R-32 - 23 % R-125 - 25 % R-134a - 52 %
Environmental Classification	-	HFC
Molecular Weight	gr/grmole	86,20
Saturated Vapour Temperature @ 1,013 bar	°C	-36,37
Temperature Glide @ 1,013 bar	K	7,00
Density of Liquid @ 25°C	kg/m³	1.097,30
Density of Saturated Vapour @ 1,013 bar	kg/m³	4,63
Pressure of Saturation (Saturated Liquid) @ 25°C	bar_rel	11,05
Pressure of Saturation (Saturated Liquid) @ 50°C	bar_rel	21,24
Critical Temperature	°C	86,19
Critical Pressure	bar_rel	45,30
Critical Density	kg/m³	453,43
Heat of Evaporation @ 1,013 bar	kJ/Kg	248,94
Specific Entropy of Liquid @ 25°C	kJ/Kg*°C	1,12
Specific Entropy of Vapour @ 25°C	kJ/Kg*°C	1,57
CP/CV Ratio @ 25°C - 1,013 bar_ass		1,15
ODP	(R11 = 1)	0,00
Atmospheric Life Time	Anni	15,66
GWP - IPCC rev. 4 (IPCC rev. 5)	(CO <sub>2</sub> = 1)	1774 (1624)
ASHRAE Standard 34 Safety Rating		A1
Lower Flammability Limit	%	Non-flammable
Classification according to Directive 97/23/CE PED	Group	2

## Applications

KrioNext® 407C is used in home and small shop air conditioning systems.

KrioNext® 407C is also used in water chillers not provided with centrifugal compressor, and in medium temperature refrigeration systems.

## Performance

- ✓ Minimum capacity reduction compared to R-22.
- ✓ Because of its characteristics similar to R-22, KrioNext® 407C can be used in conversion fluid in systems that usually use R-22.
- ✓ Changes in the project to achieve a performance optimization are minimum.

## Recommended Lubricants

When using KrioNext® 407C in conversion of systems working with R-22, some changes in the system are necessary, as for example the replacement of lubricant.

Mineral oils and alkylbenzene lubricants are immiscible with KrioNext® 407C. Please get in touch with the plant manufacturer for recommended lubricant.

# KrioNext® 407C | R-407C



Residential  
A/C



Heating  
& Plumbing



Chiller

## TEMPERATURE RANGE



TN



Tpos



Zero ODP



Medium GWP

1774 (1624)  
IPCC AR4 (AR5)

## Thermodynamic Properties

Temperature °C	Vapour Pressure		Density		Enthalpy		Entropy	
	Saturated Liquid bar_rel	Saturated Vapour bar_rel	Saturated Liquid kg/m³	Saturated Vapour kg/m³	Saturated Liquid KJ/kg	Saturated Vapour KJ/kg	Saturated Liquid KJ/kg*K	Saturated Vapour KJ/kg*K
-50	-0,22	-0,33	1.377,80	4,03	136,43	328,89	0,745	1,615
-48	-0,14	-0,25	1.371,50	4,45	138,86	330,12	0,756	1,612
-46	-0,05	-0,17	1.365,20	4,90	141,30	331,34	0,767	1,610
-44	0,05	-0,08	1.358,80	5,39	143,74	332,56	0,777	1,607
-42	0,16	0,01	1.352,40	5,91	146,20	333,78	0,788	1,605
-40	0,27	0,12	1.346,00	6,47	148,66	334,99	0,798	1,603
-38	0,39	0,23	1.339,50	7,07	151,13	336,20	0,809	1,601
-36	0,52	0,35	1.333,00	7,72	153,60	337,41	0,819	1,600
-34	0,66	0,48	1.326,50	8,41	156,09	338,61	0,830	1,598
-32	0,80	0,62	1.319,90	9,15	158,58	339,80	0,840	1,596
-30	0,96	0,76	1.313,20	9,93	161,09	340,99	0,850	1,595
-28	1,13	0,92	1.306,50	10,77	163,60	342,18	0,861	1,594
-26	1,31	1,09	1.299,70	11,67	166,13	343,35	0,871	1,592
-24	1,50	1,27	1.292,90	12,62	168,66	344,52	0,881	1,591
-22	1,70	1,46	1.286,00	13,63	171,20	345,69	0,891	1,590
-20	1,91	1,66	1.279,10	14,71	173,76	346,84	0,901	1,589
-18	2,14	1,88	1.272,10	15,85	176,33	347,99	0,911	1,588
-16	2,38	2,11	1.265,00	17,05	178,91	349,13	0,921	1,587
-14	2,63	2,35	1.257,80	18,34	181,50	350,26	0,931	1,586
-12	2,90	2,61	1.250,60	19,69	184,10	351,38	0,941	1,585
-10	3,18	2,88	1.243,30	21,13	186,72	352,49	0,951	1,584
-8	3,48	3,16	1.235,90	22,65	189,34	353,59	0,961	1,583
-6	3,79	3,46	1.228,40	24,25	191,99	354,68	0,971	1,583
-4	4,12	3,78	1.220,90	25,95	194,64	355,75	0,980	1,582
-2	4,47	4,12	1.213,20	27,74	197,31	356,81	0,990	1,581
0	4,83	4,47	1.205,50	29,63	200,00	357,86	1,000	1,580
2	5,21	4,84	1.197,60	31,63	202,70	358,90	1,010	1,580
4	5,61	5,22	1.189,60	33,74	205,42	359,92	1,020	1,579
6	6,02	5,63	1.181,50	35,96	208,15	360,92	1,029	1,579
8	6,46	6,06	1.173,30	38,31	210,90	361,90	1,039	1,578
10	6,92	6,50	1.164,90	40,79	213,67	362,87	1,049	1,578
12	7,40	6,97	1.156,40	43,40	216,46	363,82	1,058	1,577
14	7,90	7,46	1.147,80	46,16	219,27	364,74	1,068	1,576
16	8,42	7,97	1.139,00	49,07	222,10	365,64	1,078	1,576
18	8,96	8,50	1.130,10	52,14	224,95	366,52	1,087	1,575
20	9,53	9,05	1.120,90	55,38	227,82	367,38	1,097	1,575
22	10,12	9,63	1.111,60	58,80	230,71	368,20	1,107	1,574
24	10,73	10,24	1.102,10	62,42	233,63	369,00	1,116	1,573
26	11,37	10,87	1.092,40	66,24	236,58	369,77	1,126	1,573
28	12,03	11,52	1.082,40	70,28	239,55	370,50	1,136	1,572
30	12,72	12,20	1.072,20	74,56	242,55	371,20	1,145	1,571
32	13,44	12,91	1.061,80	79,10	245,58	371,86	1,155	1,570
34	14,19	13,65	1.051,10	83,91	248,64	372,48	1,165	1,569
36	14,96	14,42	1.040,00	89,02	251,74	373,06	1,175	1,568
38	15,76	15,22	1.028,70	94,44	254,87	373,59	1,184	1,567
40	16,59	16,04	1.016,90	100,22	258,05	374,07	1,194	1,566
42	17,46	16,90	1.004,80	106,39	261,26	374,49	1,204	1,565
44	18,35	17,79	992,23	112,98	264,53	374,85	1,214	1,563
46	19,28	18,72	979,18	120,04	267,84	375,14	1,225	1,562
48	20,24	19,68	965,59	127,63	271,21	375,36	1,235	1,560
50	21,24	20,67	951,38	135,81	274,65	375,49	1,245	1,558
52	22,26	21,70	936,48	144,66	278,15	375,53	1,256	1,556
54	23,33	22,77	920,77	154,28	281,73	375,46	1,266	1,553
56	24,43	23,88	904,14	164,80	285,40	375,26	1,277	1,551
58	25,58	25,03	886,40	176,40	289,18	374,91	1,288	1,547
60	26,76	26,23	867,32	189,28	293,09	374,38	1,299	1,544
62	27,98	27,46	846,59	203,76	297,15	373,62	1,311	1,540
64	29,25	28,75	823,72	220,30	301,40	372,58	1,323	1,535
66	30,56	30,09	797,97	239,60	305,92	371,16	1,336	1,529
68	31,91	31,48	768,06	262,88	310,82	369,20	1,350	1,522
70	33,32	32,93	731,35	292,58	316,32	366,38	1,366	1,512