KrioNext® 134a | R-134a

www.generalgas.eu/krionext

The reference refrigerant for motor vehicle air conditioning

KrioNext® 134a is one of the main product replacing HCFC gases and is the non-ozone depleting and non polluting option. The product has an energetic efficiency and a refrigeration capacity similar to R-12, but with a lower toxicity.

KrioNext® 134a is a reference refrigerant for motor vehicle air conditioning. It can be used in home and commercial refrigeration as well as in commercial and industrial air conditioning.

KrioNext® 134a is one of the most common components in refrigerants on the market.

Physical Properties	UM	Kryon® 134a
Chemical Formula	-	CH_2F-CF_3
Environmental Classification	-	HFC
Molecular Weight	gr/grmole	102,03
Saturated Vapour Temperature @ 1,013 bar	°C	-25,79
Temperature Glide @ 1,013 bar	K	0,00
Density of Liquid @ 25°C	kg/m^3	1.206,70
Density of Saturated Vapour @ 1,013 bar	kg/m^3	5,27
Pressure of Saturation (Saturated Liquid) @ 25°C Pressure of Saturation (Saturated Liquid) @ 50°C	bar_rel bar_rel	5,64 12,17
Critical Temperature Critical Pressure Critical Density	°C bar_rel kg/m^3	101,06 39,58 511,90
Heat of Evaporation @ 1,013 bar	kJ/Kg	216,92
Specific Entropy of Liquid @ 25°C Specific Entropy of Vapour @ 25°C	kJ/Kg*°C kJ/Kg*°C	1,12 1,72
CP/CV Ratio @ 25°C - 1,013 bar_ass		1,13
Atmosferic Life Time	Years	14
GWP - IPCC rev. 4 (IPCC rev. 5)	(CO_2 = 1)	1430 (1300)
ASHRAE Standard 34 Safety Rating		A1
Lower Flammability Limit	%	Non-flammable
Classification according to Directive 97/23/CE PED	Group	2
AIT	°C	743

Applications

KrioNext® 134a is used in all motor vehicle air conditioning systems.
KrioNext® 134a has been developed for many applications in refrigeration, as for example supermarket display cabinets, cold rooms and domestic refrigerators.
The product can be used in packaged centrifugal chillers.

Performance

- Characteristics similar to R-12 in air conditioning system.
- Slight capacity loss in low temperature applications.

Recommended Lubricants

KrioNext® 134a requires the use of polyalkylene glycol (PAG) based lubricants and polyol ester (POE) based lubricants.

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Thermodynamic Properties

Industrial Refrigeration · Commercial Refrigeration · Automotive
Residential A/C · Heating & Plumbing · Chiller

TEMPERATURE RANGE Tpos

Zero ODP · Medium GWP · 1.430 (1.300) IPCC AR4 (AR5)

Temperature	Vapour Pressure	Density		Enthalpy		Entropy	
		Saturated Liquid	Saturated Vapour	Saturated Liquid	Saturated Vapour	Saturated Liquid	Saturated Vapour
°C	bar_rel	kg/m³	kg/m³	KJ/kg	KJ/kg	KJ/kg*K	KJ/kg*K
-50	-0,72	1.446,30	1,65	135,67	367,65	0,741	1,781
-48	-0,68	1.440,60	1,84	138,15	368,92	0,752	1,777
-46	-0,64	1.434,90	2,04	140,64	370,19	0,763	1,774
-44	-0,60	1.429,20	2,27	143,14	371,46	0,774	1,770
-42	-0,55	1.423,50	2,51	145,64	372,73	0,785	1,767
-40	-0,50	1.417,70	2,77	148,14	374,00	0,796	1,764
-38	-0,45	1.411,90	3,05	150,66	375,27	0,806	1,762
-36	-0,38	1.406,10	3,36	153,18	376,54	0,817	1,759
-34	-0,32	1.400,20	3,69	155,71	377,80	0,828	1,756
-32	-0,25	1.394,30	4,04	158,25	379,06	0,838	1,754
-30	-0,17	1.388,40	4,43	160,79	380,32	0,849	1,752
-28	-0,09	1.382,40	4,84	163,34	381,57	0,859	1,749
-26	0,00	1.376,50	5,27	165,90	382,82	0,869	1,747
-24	0,10	1.370,40	5,75	168,47	384,07	0,880	1,745
-22	0,20	1.364,40	6,25	171,05	385,32	0,890	1,743
-20	0,31	1.358,30	6,78	173,64	386,55	0,900	1,741
-18	0,43	1.352,10	7,36	176,23	387,79	0,910	1,740
-16	0,56	1.345,90	7,97	178,83	389,02	0,921	1,738
-14	0,69	1.339,70	8,62	181,44	390,24	0,931	1,736
-12	0,84	1.333,40	9,31	184,07	391,46	0,941	1,735
-10	0,99	1.327,10	10,04	186,70	392,66	0,951	1,733
-8	1,16	1.320,80	10,82	189,34	393,87	0,961	1,732
-6	1,33	1.314,30	11,65	191,99	395,06	0,971	1,731
-4	1,51	1.307,90	12,52	194,65	396,25	0,980	1,729
-2	1,71	1.301,40	13,45	197,32	397,43	0,990	1,728
0	1,91	1.294,80	14,43	200,00	398,60	1,000	1,727
2	2,13	1.288,10	15,47	202,69	399,77	1,010	1,726
4	2,36	1.281,40	16,56	205,40	400,92	1,020	1,725
6	2,61	1.274,70	17,72	208,11	402,06	1,029	1,724
8	2,86	1.267,90	18,94	210,84	403,20	1,039	1,723
10	3,13	1.261,00	20,23	213,58	404,32	1,049	1,722
12	3,42	1.254,00	21,58	216,33	405,43	1,058	1,721
14	3,72	1.246,90	23,02	219,09	406,53	1,068	1,720
16	4,03	1.239,80	24,52	221,87	407,61	1,077	1,720
18	4,36	1.232,60	26,11	224,66	408,69	1,087	1,719
20	4,70	1.225,30	27,78	227,47	409,75	1,096	1,718
22	5,07	1.218,00	29,54	230,29	410,79	1,106	1,717
24	5,44	1.210,50	31,39	233,12	411,82	1,115	1,717
26	5,84	1.202,90	33,34	235,97	412,84	1,125	1,716
28	6,26	1.195,20	35,38	238,84	413,84	1,134	1,715
30	6,69	1.187,50	37,54	241,72	414,82	1,144	1,715
32	7,14	1.179,60	39,80	244,62	415,78	1,153	1,714
34	7,61	1.171,60	42,18	247,54	416,72	1,162	1,713
36	8,11	1.163,40	44,68	250,48	417,65	1,172	1,712
38	8,62	1.155,10	47,32	253,43	418,55	1,181	1,712
40	9,15	1.146,70	50,09	256,41	419,43	1,191	1,711
42	9,71	1.138,20	53,00	259,41	420,28	1,200	1,710
44	10,29	1.129,50	56,06	262,43	421,11	1,209	1,710
46	10,89	1.120,60	59,29	265,47	421,92	1,219	1,709
48	11,52	1.111,50	62,69	268,53	422,69	1,228	1,708
50	12,17	1.102,30	66,27	271,62	423,44	1,238	1,707
52	12,84	1.092,90	70,05	274,74	424,15	1,247	1,706
54	13,54	1.083,20	74,03	277,89	424,83	1,256	1,706
56	14,27	1.073,40	78,24	281,06	425,47	1,266	1,705
58	15,02	1.063,20	82,68	284,27	426,07	1,275	1,704
60	15,81	1.052,90	87,38	287,50	426,63	1,285	1,702
62	16,62	1.042,20	92,36	290,78	427,14	1,294	1,701
64	17,45	1.031,20	97,64	294,09	427,61	1,304	1,700
66	18,32	1.020,00	103,24	297,44	428,02	1,314	1,699
68	19,22	1.008,30	109,21	300,84	428,36	1,323	1,697
70	20,16	996,25	115,57	304,28	428,65	1,333	1,696