



KRYON

Refrigerant Solutions



404A



410A



507



134A



407C





Kryon[®] 404A (R-404A)

The non-ozone depleting replacement to R22 for commercial and industrial refrigeration (LT and MT).

Physical Properties	UM	Kryon [®] 404A
Composition	% by weight	R-125 - 44 % R-143a - 52 % R-134a - 4 %
Environmental Classification	-	HFC
Molecular Weight	gr/grmole	97,60
Saturated Vapour Temperature @ 1,013 bar	°C	-45,20
Temperature Glide @ 1,013 bar	K	0,75
Density of Liquid @ 25°C	kg/m ³	1,044,10
Density of Saturated Vapour @ 1,013 bar	kg/m ³	5,35
Pressure of Saturation (Saturated Liquid) @ 25°C	bar_rel	11,53
Pressure of Saturation (Saturated Liquid) @ 50°C	bar_rel	22,09
Critical Temperature	°C	72,12
Critical Pressure	bar_rel	36,33
Critical Density	kg/m ³	482,16
Heat of Evaporation @ 1,013 bar	kJ/Kg	200,34
Specific Entropy of Liquid @ 25°C	kJ/Kg°C	1,12
Specific Entropy of Vapour @ 25°C	kJ/Kg°C	1,60
CP/CV Ratio @ 25°C - 1,013 bar_ass		1,13
ODP	(R11 = 1)	0
Atmospheric Life Time	Years	40,36
GWP - IPCC rev. 4 (IPCC rev. 5)	(CO ₂ = 1)	3922 (3943)
ASHRAE Standard 34 Safety Rating		A1
Lower Flammability Limit	%	Non-flammable
Classification according to Directive 97/23/CE PED	Group	2
AIT	°C	728

Applications

Kryon[®] 404A is used in low and medium commercial and industrial refrigeration, as for example supermarket display cabinets, cold rooms, stands, refrigerated transport and ice making machines.

Performance

- ✓ Capacity and efficiency similar to R-502.
- ✓ Its use has been approved by the major compressor manufacturers.

Recommended Lubricants

Kryon[®] 404A is used with all lubricants that are miscible with HFC refrigerants. Kryon recommend the use of a lubricant like polyol ester (POE) that has been approved by compressor manufacturers. Different kinds of polyol ester (POE) are not interchangeable. In case of conversion of the system, please consult the compressor manufacturer in order to verify the correct type and viscosity grade.



Kryon[®] 410A (R-410A)

The high efficiency and non-ozone depleting solution for residential air conditioning



Physical Properties	UM	Kryon [®] 410A
Composition	% by weight	R-32 - 50 % R-125 - 50 %
Environmental Classification	-	HFC
Molecular Weight	gr/grmole	72,58
Saturated Vapour Temperature @ 1,013 bar	°C	-51,11
Temperature Glide @ 1,013 bar	K	0,08
Density of Liquid @ 25°C	kg/m ³	1.058,60
Density of Saturated Vapour @ 1,013 bar	kg/m ³	4,22
Pressure of Saturation (Saturated Liquid) @ 25°C	bar_rel	15,56
Pressure of Saturation (Saturated Liquid) @ 50°C	bar_rel	29,69
Critical Temperature	°C	71,34
Critical Pressure	bar_rel	47,99
Critical Density	kg/m ³	459,03
Heat of Evaporation @ 1,013 bar	kJ/Kg	272,66
Specific Entropy of Liquid @ 25°C	kJ/Kg*°C	1,14
Specific Entropy of Vapour @ 25°C	kJ/Kg*°C	1,76
OP/CV Ratio @ 25°C - 1,013 bar_ass		1,18
ODP	(R11 = 1)	0,00
Atmospheric Life Time	Anni	16,95
GWP - IPCC rev. 4 (IPCC rev. 5)	(CO ₂ = 1)	2088 (1924)
ASHRAE Standard 34 Safety Rating		A1
Lower Flammability Limit	%	Non-flammable
Classification according to Directive 97/23/CE PED	Group	2

Applications

Kryon[®] 410A is used in new home and small shop air conditioning systems.

Kryon[®] 410A is an excellent refrigerant in new concept water coolers not provided with centrifugal compressor.

It Kryon[®] 410A can be used as replacement product of R-22 in new commercial refrigeration systems (low and medium temperature), including supermarket refrigerated display cases and refrigerated transport.

Performance

✓ Tests show that Kryon[®] 410A assures an energy efficiency index that is 5-6% higher compared to R-22, in systems designed for its use and provided with scroll compressor or other.

✓ Its characteristics allow the designing of smaller air conditioning systems and compact systems that usually use R-22.

Recommended Lubricants

Kryon[®] 410A needs the use of mixable lubricants, as for example Polyol Ester Oil (POE). Most of the manufacturers of compressors recommend specific POE lubricants. So the user should check the lubricant recommended by the manufacturer.



Kryon® 134A (R-134A)

The non-ozone depleting solution for motor vehicle air conditioning.

Physical Properties	UM	Kryon® 134a
Chemical Formula	-	CH ₂ F-CF ₃
Environmental Classification	-	HFC
Molecular Weight	gr/gmole	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	bar_rel	5,64
Pressure of Saturation (Saturated Liquid) @ 50°C	bar_rel	12,17
Critical Temperature	°C	101,06
Critical Pressure	bar_rel	39,58
Critical Density	kg/m ³	511,90
Heat of Evaporation @ 1,013 bar	kJ/Kg	216,92
Specific Entropy of Liquid @ 25°C	kJ/Kg*°C	1,12
Specific Entropy of Vapour @ 25°C	kJ/Kg*°C	1,72
CP/CV Ratio @ 25°C - 1,013 bar_ass		1,13
Atmospheric 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

Kryon® 134A is used in all motor vehicle air conditioning systems. Kryon® 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

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



Kryon® 407C (R-407C)

The non-ozone depleting replacement to HCFC R22 for residential air conditioning

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 ₂ = 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

Kryon® 407C is used in home and small shop air conditioning systems. Kryon® 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, Kryon® 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 Kryon® 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 Kryon® 407C. Please get in touch with the plant manufacturer for recommended lubricant.



Kryon® R404A - R410A

Kryon® R404A - 40"x 48"
40 Cylinders each pallet with overpack



Kryon® R410A - Pallet 40"x 48"
40 Cylinders each pallet with overpack



Kryon® Non-Refillable Cylinders are manufactured in full compliance with DOT 39 standards. Each cylinder is packed in high-strength cardboard box, to make its transport, handling and storage easier.

Kryon® cylinders are filled by GeneralGas with the use of a patented system called "High Purity System"; this method makes it possible to reach very high quality standards, as required by the leading R&AC OEMs.

Gas purity is equal or better than required by international standards AHRI 700-2017, including gas humidity which is equal to 10 ppm only.

Kryon® DOT 39 Non-refillable Cylinders

404A



410A



407C



134A

