

ENGINEERING CHANGE NOTICE

REFRIGERANT R513A APPROVAL FOR EMBRACO BRAZIL COMPRESSORS

Refrigerants with high GWP values (GWP – Global Warming Potential) are under pressure in light commercial applications due to global regulations at Europe Union with new regulation (N° 517/2014) as well in United States of America with recent EPA rules (July 2, 2015 and September 26, 2016).

Embraco offers a complete product line of compressors for applications with hydrocarbon refrigerants (R290 and R600a) as a long term solution to meet the increasing market demand of high efficiency and low GWP refrigerants (<150 GWP). However, all the current chemical refrigerants to replace R134a with GWP < 150 are flammable, therefore subjected to refrigerant charge limitations. For this reason, a series of intermediate GWP non flammable blends were proposed in order to bridge the transition to a later final solution. Opteon XP10 (R513A) is an intermediate refrigerant alternative to R134a. Below you can verify the main properties of each one:

	R134a	R513A
Type	HFC	HFC Blend
Safety class	A1	A1
Boiling Temperature @ 1 atm	-26°C (-15°F)	-29.2°C (-20.6°F)
Critical Temperature	101°C (214°F)	96.5°C (173.7°F)
Bubble-Dew @ 1 atm (abs)	No glide	0K (0°R)
GWP	1430	573

Embraco, after performing an extensive and complete testing program with Opteon XP10 (R513A), approves R513A as an alternative refrigerant to R134a for the Embraco compressors listed below. Embraco authorizes the use of R513A, maintaining the same operating envelope, electrical components and all Embraco application's guideline as the R134a (e.g. system charge limitations defined for each compressors family).

ENGINEERING CHANGE NOTICE

REFRIGERANT R513A APPROVAL FOR EMBRACO BRAZIL COMPRESSORS

EG models approved to be used with R513A	
EGYS60HLP	EGZS80HLP
EGZS60HLP	EGAS90HLR
EGAS70HLR	EGUS90HLP
EGUS70HLP	EGYS90HLP
EGX70HLC	EGZS90HLC
EGYS70HLP	EGZS90HLP
EGZS70HLC	EGAS100HLP
EGZS70HLP	EGAS100HLR
EGAS80HLR	EGUS100HLP
EGUS80HLP	EGYS100HLP
EGX80HLC	EGZS100HLC
EGYS80HLP	EGU130HLR
EGZS80HLC	EG130HLR

VEG/VEM models approved to be used with R513A	
VEGC6H	VEMY3H
VEGC8H	VEMY4H
VEGT11HB	VEMY5H
VEGT8HB	VEMY6H
VEGY6H	VEMY6HH
VEGY7H	
VEGY8H	
VEGZ6H	
VEGZ7H	

F models approved to be used with R513A	
FF7,5HBK	FFU80HAK
FF7,5HAK	FFU80HAX
FF8,5HBK	FFUS80HAK
FF8,5HAK	FFU100HAK
FF10HBK	FFUS100HAK
FF10HBX	FFUS100HAX
FFI10HAK	FFC110HBK
FFI10HBX	FFC110HBX
FFI12HBK	FGS125HAS
FFI12HBX	FFU130HAX
FFU70HAK	FFU160HAX
FFUS70HAK	

EM models approved to be used with R513A			
EM20HBR	EMIE40HJP	EMT50HDP	EMU65HLP
EM20HHR	EM45HHR	EM55HHR	EMI70HER
EM20HSC	EM45HNR	EM55HNR	EMIS70HHR
EMIS20HHR	EMI45HER	EM55HNX	EMX70HSC
EM30HHR	EMT45HDR	EMI55HER	EMY70HER
EM30HNR	EMU45HEP	EM2Z60HLT	EMY70HSC
EMI30HER	EMU45HER	EM60HNP	EMYE70HEP
EMI30HEX	EMU45HSC	EMI60HEP	EM2U80HLP
EMIE30HER	EMY45HER	EMI60HER	EM2Z80HLT
EMIS30HHR	EMY45HSC	EMYS60HEP	EMT37HDP
EMU30HSC	EM2U50HLP	EM65HHC	EMT6144Z
EM40HNP	EM2Y50HLT	EM65HHR	EMT6160Z
EMI40HNR	EM50HNP	EM65HNR	EMT6170Z
EMIE40HER	EMI50HER	EMIE65HER	

ENGINEERING CHANGE NOTICE

REFRIGERANT R513A APPROVAL FOR EMBRACO BRAZIL COMPRESSORS

Despite of the fact that Embraco is approving all models listed above to be used with R513A, some impacts are expected and it is the customer responsibility to validate the application and all requirements. The list below show the expected impact with the refrigerant changing:

Refrigerant	R134a	R513A
Capacity	Reference	Higher
Efficiency	Reference	Higher
Stalling Temperature	Reference	Lower
Minimum Starting Voltage	Reference	Similar or Higher
Noise	Reference	Similar or Higher
Thermal Profile	Reference	Lower

In addition, the compressor labels and datasheets will not be affected. It means that Embraco will not apply any mark on labels regarding R513A nor update the datasheet with R513A information.

For further information, please contact our Technical Support team.