

Refrigerant R513A in Secop Compressors

At Secop, product development is focused on highly efficient and eco-friendly products. We believe, as all the major market stakeholders, that hydrocarbon refrigerants (isobutane R600a and propane R290) are the best solution for light commercial applications requiring low and medium back pressure.

The use of R134a in light commercial applications is under pressure due to global regulations, however special attention is given to F-gas regulation in Europe. Secop recommends the move to hydrocarbon refrigerant solutions (R600a and R290) which perfectly meet the increasing market demand for high efficiency while utilizing natural refrigerants with very low GWPs.

We understand that there is a transition period, where specific applications will use different refrigerants while application redesign to hydrocarbons is not possible in a short time. A new alternative on the market is the refrigerant R513A. Analysis confirms that R513A can be used in R134a compressors, except on a specific out of range condition.

Based on the above explanation, Secop allows the use of R513A on all its R134a released compressors, except on applications operating more than 6 to 10% below the nominal voltage, according to the table below:

Nominal Voltage [V]	Frequency [Hz]	Minimum Voltage [V]	
220	50	-10%	198
220	60	-6%	207
208	60	-6%	196
115	60	-10%	104

The restrictions above do not apply to BD series compressors.

For applications in which the input voltage range can be lower than the indicated minimum value, please contact your distributor or local Secop contact person for further information.

It is the customer's responsibility to validate the application and requirements and constraints should be carefully considered when changing the R134a to R513A in the application.

Refrigerant	R134a	R513A	R1234yf	R290	R600a
Classification	HFC (hydrofluorocarbons)	HFO (hydrofluoro-olefin) HFC (hydrofluorocarbons)	HFO (hydrofluoro-olefin)	HC (hydrocarbons)	HC (hydrocarbons)
GWP* Global Warming Potential	1430	631	4	3	3
Safety Group	A1 (not flammable)	A1 (not flammable)	A2L (slightly flammable)	A3 (highly flammable)	A3 (highly flammable)
Main Application	L/MBP	L/MBP	L/MBP	L/MBP	L/MBP
Compatible Lubricants	Polyolester	Polyolester	Polyolester	Polyolester Mineral Oil Alkylbenzene	Polyolester Mineral Oil Alkylbenzene
Temperature Glide**	none	none	none	none	none
Cooling Capacity	reference	similar or higher	similar or lower	-	-
Efficiency	reference	similar or lower	similar or lower	-	-

* According to IPCC IV – time horizon 100 years.

** Total glide from bubble to dew line – based on 1 bar (abs) pressure.