

Refrigerant R452A in Secop Compressors

At Secop, product development is focused on high efficiency 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 in low and medium back pressure.

The use of R404A and R507 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. Tests have so far shown good results with refrigerant R452A as a drop-in replacement for R404A and R507.

Based on this information, Secop allows the use of R452A on all its R404A and R507 released compressors.

It is the customer's responsibility to validate the application and they should carefully consider the requirements and constraints when changing the R404A/R507 to R452A in their application.

Refrigerant	R404A	R452A	R290
Classification	HFC (hydrofluorocarbons)	HFO (hydrofluoro-olefin)	HC (hydrocarbons)
GWP (Global Warming Potential)	3922	2141	3
Safety Group	A1 (not flammable)	A1* (not flammable)	A3 (highly flammable)
Main Application	L/MBP	L/MBP	L/MBP
Compatible Lubricants	Polyolester	Polyolester	Polyolester Mineral Oil Alkylbenzene
Temperature Glide	0,7K	~4K	none
Cooling Capacity	reference	similar	similar
Efficiency	reference	similar	better
* R452A is classified as "A1 - Not Flammable", yet it contains a mixture of R32 and R1234yf, which are both mildly flammable. A such precaution should be taken if the refrigerant becomes mixed with air.			

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