

The Most Environmentally Acceptable non-flammable refrigerant of its kind

Replaces HCFC based products

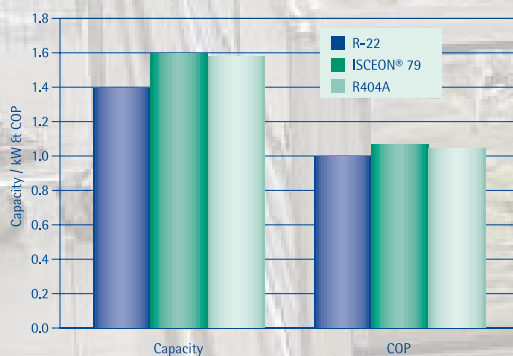
ISCEON® 79 is the low temperature zero ODP direct replacement for the HCFC containing blends that originally replaced R502 such as R402A/B, R403A/B, R408A, R411B and can be used without the need to change the oil type.

Better performance* & Environmental properties than R404A and R507

ISCEON® 79 is the most environmentally acceptable zero ODP, non-flammable replacement of its kind especially where customers are looking for a refrigerant with a higher capacity, higher COP and >20% lower GWP than R404A / R507.

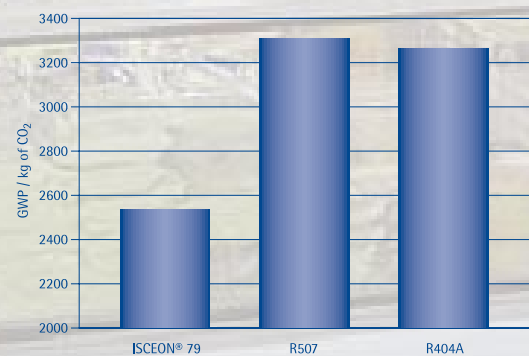
Performance & Environmental Properties

ISCEON® 79 Performance Comparison*



*Evaporating temperature -30°C, condensing temperature 40°C suction superheat 37K, subcooling 11K.

ISCEON® 79 GWP Comparison**



**100 year Integrated Time Horizon

- + Replaces the HCFC blends R402A/B, R403A/B, R408A, R509 and R411B
- + Higher Capacity & COP than R404A & R507
- + >20% Lower Global Warming Potential
- + Lower compression ratio than R404A and R507
- + Suitable for use with both Mineral and polyol ester based oils
- + Zero Ozone Depletion Potential, non-toxic and non-flammable
- + No engineering changes needed
- + Suitable for New and Existing equipment



Before conversion it is important to ensure the system is in good working order and leak free. If possible briefly check typical evaporator and condensing pressures of the system.

- Turn on compressor crankcase heater (if fitted) and recover the refrigerant to a dedicated cylinder. Do not vent and do not mix different types of refrigerant.
- If possible, check the condition of the lubricant, e.g. water, acid, solids, and if necessary renew the contaminated oil with the same type of lubricant and dispose of the old oil responsibly. ISCEON® 79 is compatible with Mineral, Alkyl Benzene and Polyol-Ester based lubricants.
- It is considered good practice to change the filter / drier whenever the system is exposed to atmospheric air. In small hermetic systems it may not be necessary to change the filter / drier provided care is taken not to allow moist air to enter the system.
- Check the condition of any seals and replace if in a poor condition. It is not necessary to use any different materials when converting to ISCEON® 79.
- Pressure test the system with dry nitrogen 25 bar and then evacuate to at least 500 mbar (if an oil change is performed, evacuate to at least 50 mbar).
- Charge the equipment with the new refrigerant, removing from the cylinder in the liquid phase. Do not charge liquid refrigerant directly into the compressor. The total charge of ISCEON® 79 is 4% less than R22, 9% more than R404A/R507 and 6% less than R502 by weight. NOTE: It is not unusual for the occasional bubble to be seen in the liquid line sight glass. A small number of bubbles in the sight glass is not a reliable indication of an under-charged system.
- Run the system and check operating conditions. NOTE: the pressure / temperature relationship of ISCEON® 79 is different from that of R22, R404A/R507 and R502. It is therefore necessary to have the ISCEON® 79 pressure tables available.
- If possible check the oil level. Removal of the refrigerant from a system can result in the loss of significant amounts of oil. If the oil level falls to below the minimum allowed, top up the oil to the minimum level. Do not fill to maximum as the level may rise again. Within a short period the oil level will stabilise.
- Carry out a thorough leak check. Any detection system suitable for detecting HFC refrigerants (e.g. R134a) is suitable for detecting ISCEON® 79.
- Clearly label the system as containing ISCEON® 79.
- In the event of a leak from the system it is possible to top-up the system with virgin product without detriment to the performance.
- It is possible to recycle ISCEON® 79 but care must be taken to ensure the whole of the refrigerant charge is removed from the system. It is equally important to ensure that when recovered product is once again charged to a system, the refrigerant is taken from the liquid phase.

The information contained in this document is given in good faith based on our current knowledge. It is only an indication and is in no way binding, particularly as regards infringement of or prejudice to third party rights through the use of our products. Rhodia Organique Fine Limited Technical Service will be pleased to give further advice and assistance but customers must satisfy themselves (by appropriate testing if necessary) that the product is suitable for their purpose and conditions of use. ISCEON® 9 Series patented refrigerants developed by Rhodia and Star Refrigeration.



Fluorinated Consumer Products

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