



EQUIPMENT OEM DESIGN POINTS **R441a (HCR188C)**

Zero ODP/ Zero GWP Replacement for R12/R134a/R22.

Super energy-efficient. Compatible with all lubricants.

Applications

This refrigerant is intended for use in refrigerators, freezers, vending machines and automotive air-conditioners designed for 134a and R22 window air-conditioners, with expected typical evaporating temperatures of (but not limited to) 0°C and condensing temperature of (but not limited to) 37°C.

Important design tips

1. Circulation of R441a does not require similar compressor force as CFC, HCFC and HFC refrigerants.
2. Greater energy savings can be achieved with R441a by downsizing the current systems compressor by 25 to 35% and then testing for compressor performance.
3. Use only a 25 to 35% R441a charge to achieve maximum performance in above mentioned systems designed for 134a and R22. Example: if a 134a/R22 system normally takes a 1 lb (16oz) charge then only use 4 to 5.6 ounces of R441a to achieve optimal performance.
4. Additional energy savings with the same performance plus a further 10% R441a charge reduction can be achieved by downsizing the evaporator.

R441a Physical Properties

Formulation Components	R170/290/600a/600
Molecular mass as formulated	48.23 g/mol
Molecular mass of the vapor at 60°C (140°F)	44.77g/mol
Critical temperature	117.3°C
Dew-point temperature at 101 kPa (14.7 psia)	-20.4°C
Bubble-point temperature at 101 kPa (14.7 psia)	-41.9°C
Latent heat of the vapor at 60°C (140°F)	285.48 kJ/kg
Specific heat ratio of the vapor at 60°C (140°F)	1.36
Maximum temperature glide	
At the normal boiling point	21.5°C
At 20°C (68°F)	17.2°C
Specific volume at the critical point	0.005295 m ³ /kg
Ozone Depletion Potential (ODP)	0
Global Warming Potential (GWP)	0

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