



Opteon™ XP20

Refrigerant (R-449C)

Product Information

Opteon™ XP20 (R-449C) is a non-ozone depleting, low global warming potential (GWP), hydrofluoroolefin (HFO)-based refrigerant with an optimal balance of properties to replace R-22 in residential and commercial air conditioners as well as direct expansion chillers.

Opteon™ XP20 is suitable for new installations, as well as for retrofits of existing systems, offering similar efficiency and capacity to R-22.

Applications

- Residential air conditioning
- Commercial air conditioning
- Direct expansion AC chillers
- New equipment/retrofit of existing systems

Opteon™ XP20 Cycle Calculations

In a retrofit scenario, adjustments to mechanical expansion valves might be required to reach equivalent superheat. However, due to the similar mass flow and pressures of Opteon™ XP20 to R-22, total expansion device replacement would not be expected. For any R-22 retrofit to an HFC/HFO, the lubricant must be changed to POE and any critical elastomeric seals need to be replaced.

Benefits

- ASHRAE Class A1 nonflammable refrigerant
- With a GWP of 1147*, Opteon™ XP20 provides the industry with a lower GWP replacement for existing R-22 air conditioners
- Minimal design differences between existing R-22 and new Opteon™ XP20 air conditioners
- Lower discharge temperatures
- Close capacity and efficiency match to R-22
- Can be topped off after leaks

*Based on IPCC AR5 GWP values

Opteon™ XP20 Properties

ASHRAE Number	R-449C
Composition	R-125/R-134a/R-32/R-1234yf
Weight %	20/29/20/31
Molecular Weight	90.3 g/mol
Boiling Point at 101.3 kPa (1 atm)	-44.5 °C (-48.1 °F)
Critical Pressure	4398 kPa [abs] (637.8 psia)
Critical Temperature	84.2 °C (183.5 °F)
Liquid Density at 21.1 °C (70 °F)	1119.1 kg/m ³ (69.8 lb/ft ³)
Ozone Depletion Potential (CFC-11 = 1.0)	0
AR5 Global Warming Potential	1147
ASHRAE Safety Classification	A1
Temperature Glide	~4.5 K (~8.1 °R)

Conditions: 40 °C Condenser, 10 °C Evaporator, 20 °C Suction Temperature, 5 K Subcool

Refrigerant	Relative Capacity	Relative COP	Relative Mass Flow Rate	Suction Pressure (kPa)	Discharge Pressure (kPa)	Discharge Temperature (°C)
R-22	1.00	1.00	1.00	680.9	1533.6	71.0
Opteon™ XP20 (R-449C)	1.03	0.98	1.08	707.4	1643.3	61.4



For more information on the Opteon™ family of refrigerants, or other refrigerants products, visit opteon.com or call (800) 235-7882.

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