Opteon™ XP40
Refrigerant

Product Information

Opteon™ XP40 (R-449A) is a non-ozone depleting, low global warming potential (GWP) hydrofluoro-olefin (HFO) based refrigerant with an optimal balance of properties to replace R-404A/R-507, R-22, or R-407 series in positive displacement, direct expansion, low- and medium-temperature commercial and industrial applications.

Opteon™ XP40 is suitable for new installations, as well as for retrofit of existing systems, offering improved energy efficiency and environmental properties.

Applications

Low- and medium-temperature commercial and industrial DX refrigeration

- Supermarkets
  - Centralized rack systems
  - Distributed systems
  - Walk-in coolers/freezers, prep rooms, etc.
- Food service (e.g., condensing units)
- Cold storage
- Self-contained systems
- New equipment/retrofit of existing systems

Benefits

- Low GWP: 65% reduction compared to R-404A/R-507[1]
- 8-12% lower energy consumption compared to R-404A/R-507
- Safe and nonflammable (ASHRAE[2] A1)
- Approved by major equipment and component manufacturers
- Extensively field tested with no equipment/lubricant/seal changes (superheat adjustment may be required)
- Alternative to R-407 series low- and medium-temperature refrigerants (equivalent capacity)
- Compatible with existing equipment design/lubricants
- Can be topped off after leaks

[1]According to Assessment Report 4 (AR4)

[2]American Society of Heating, Refrigerating, and Air-Conditioning Engineers

Chemours™

LOW GWP ©

Opteon™ XP40 Properties

ASHRAE Number	R-449A
Composition	R-32/R-125/HFO-1234yf/R-134a
Weight %	24.3/24.7/25.3/25.7
Molecular Weight	87.2 g/mole (87.2 lb/lb mole)
Boiling Point at 101.3 kPa (1 atm)	-46.0 °C (-50.7 °F)
Critical Pressure	4447 kPa [abs] (655.0 psia)
Critical Temperature	81.5 °C (178.7 °F)
Liquid Density at 21.1 °C (70 °F)	1113.3 kg/m^3 (69.5 lb/ft^3)
Ozone Depletion Potential (CFC-11 = 1.0)	0
AR4 Global Warming Potential (CO_2 = 1.0)	1397
ASHRAE Safety Classification	A1
Temperature Glide	-4 K (-7 °R)

What to expect after retrofitting

The data below was obtained from a display case/condensing unit converted to Opteon™ XP40 from R-404A with only adjustments to the TXV (1.5 turns closed) during low- and medium-temperature operation at two ambient conditions per ASHRAE Standard 72-2005.[3]

	Medium Temperature		Low Temperature	
Ambient Temperature	28 °C (82 °F)	35 °C (95 °F)	28 °C (82 °F)	35 °C (95 °F)
Energy Consumption	-8%	-12%	-3%	-4%
Relative Mass Flow	-16%	-17%	-19%	-21%
Suction Pressure	+0 kPa (+0 psi)	+35 kPa (+5 psi)	-8 kPa (-1 psi)	-12 kPa (-2 psi)
Discharge Pressure	-48 kPa (-7 psi)	-35 kPa (-5 psi)	-31 kPa (-4.5 psi)	-37 kPa (-5.4 psi)
Discharge Temperature	+3 K (+5.4 °R)	+2 K (+3.6 °R)	+5 K (+9 °R)	+5 K (+9 °R)

+ is an increase, - is a decrease relative to R-404A

[3]Actual performance for a specific system depends on a number of factors, including equipment conditions and operating environment.

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

Replaces: K-28827
C-10021 (11/15)