



Opteon™ XP40

Refrigerant (R-449A)

Product Information

Opteon™ XP40 (R-449A) is a non-ozone depleting, low Global Warming Potential (GWP) hydrofluoroolefin-based refrigerant with an optimal balance of properties to replace R-404A/R-507A 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 stores
- Self-contained systems
- New equipment/retrofit of existing systems

Benefits

- Non-ozone depleting and low GWP (>65% reduction vs. R-404A) ¹⁾
- Improved energy efficiency vs. R-404A/R-507A
- Provides quick, easy and cost-effective retrofit from R-404A/R-507A
- Safe and non-flammable (ASHRAE ²⁾ A1)
- Approved and adopted by major equipment 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
- Miscible with POE lubricants
- Can be topped off after leaks

Opteon™ XP40 properties

ASHRAE Number	R-449A
Composition wt.-%	R-32/R-125/R-1234yf/R-134a 24.3/24.7/25.3/25.7
Molecular Weight	87.2 g/mol
Boiling Point @ 1 atm (101.3 kPa)	-46.0 °C
Critical Pressure	4447 kPa
Critical Temperature	81.5 °C
Liquid Density @ 21.1 °C	1113.3 kg/m 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

1) According to Assessment Report 4 (AR4) which is the basis for the F-Gas regulation (EU) No. 517/2014.

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



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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 72-20052. ³⁾

	Medium Temperature		Low Temperature	
	28 °C	35 °C	28 °C	35 °C
Ambient T	28 °C	35 °C	28 °C	35 °C
Energy consumption	-8%	-12%	-3%	-4%
Relative mass flow	-16%	-17%	-19%	-21%
Suction P	+0 kPa	+35 kPa	-8 kPa	-12 kPa
Discharge P	-48 kPa	-35 kPa	-31 kPa	-37 kPa
Discharge T	+3 K	+2 K	+5 K	+5 K

+ 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 Chemours Refrigerants products visit opteon.com

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