

# FORANE®

## REFRIGERANTS

CAS No. 75-10-5 (HFC-32) / 354-33-6 (HFC-125) / 754-12-1 (HFO-1234yf) / 811-97-2 (HFC-134a) / 29118-24-9 (R-1234ze(E))

# Forane® 448A

Difluoromethane (HFC-32) / Pentafluoroethane (HFC-125) / 2,3,3,3 Tetrafluoropropene (HFO-1234yf) / 1,1,1,2-Tetrafluoroethane (HFC-134a) / trans-1,3,3,3, Tetrafluoropropene (R-1234ze(E))

### GENERAL DESCRIPTION

Forane® 448A is a lower GWP, A1 (non-flammable) refrigerant blend designed to replace R-404A, R-507A, R-22, and R-407 series in low to medium temperature refrigeration applications. It can be used in new equipment or as a retrofit.

### PROPERTIES

Appearance	Colorless liquefied gas
Odor	Faint, ether-like odor
Molecular Mass (g/mole of blend)	86.3
ANSI/ASHRAE Standard 34 Safety Group Classification	A1
Ozone Depletion Potential (ODP) (CFC-11 = 1.0)	0
Global Warming Potential (GWP <sup>(1)</sup> ) (CO <sub>2</sub> = 1.0)	1386

(1) GWP according to IPCC AR4. Values for 100-year time horizon.

### TEMPERATURE

	50°F	70°F	105°F	115°F	130°F
Vapor Pressure, psia <sup>(2)</sup>	103.7	145.0	246.0	282.8	346.0
Liquid Density, lb./ft <sup>3</sup> (2)	72.4	69.6	63.8	61.9	58.7

(2) Generated using NIST REFPROP Version 10.0.

### SPECIFICATIONS

(Meets AHRI 700 - 2019 Specifications)

	Maximum (unless otherwise indicated)
Difluoromethane (HFC-32), wt%	26.0 (24.0-26.5)
Pentafluoroethane (HFC-125), wt%	26.0 (25.5-28.0)
2,3,3,3 Tetrafluoropropene (HFO-1234yf), wt %	20.0 (18.0-20.5)
1,1,1,2-Tetrafluoroethane (HFC-134a), wt %	21.0 (20.0-23.0)
trans-1,3,3,3, Tetrafluoropropene (R-1234ze(E)), wt %	7 (5.0-7.5)
Air and Other Non-condensable Gases, vol %	1.5
Volatile Impurities, wt %	0.5
High Boiling Residue, vol %	0.01
Moisture (H <sub>2</sub> O), ppm by wt	10
Acidity, ppm by wt (as HCl)	1.0
Chloride, no visible turbidity (indicates about 3 ppm)	Pass
Particulates/solids (visually clean to pass)	Pass

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BEFORE HANDLING THIS MATERIAL, READ AND UNDERSTAND THE SDS (SAFETY DATA SHEET) FOR ADDITIONAL INFORMATION ON PERSONAL PROTECTIVE EQUIPMENT AND FOR SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION.

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