

# FORANE<sup>®</sup>

## REFRIGERANTS

CAS No. 75-10-5 (HFC-32) / 754-12-1 (HFO-1234yf)

# Forane<sup>®</sup> 454B

Difluoromethane (HFC-32) / 2,3,3,3 Tetrafluoropropene (HFO-1234yf)

### GENERAL DESCRIPTION

Forane<sup>®</sup> 454B is a low GWP, A2L (mildly flammable), HFO replacement for R-410A in new air conditioning or heat pump applications. Its pressures and temperatures match closely those of R-410A so it can use the same rated compressors, heat exchangers and most components that were used in R-410A systems. The use of Forane<sup>®</sup> 454B, an A2L or mildly flammable refrigerant, necessitates the adoption of features such as leak detection, use of non-sparking controls and switches and other changes depending on the size of the charge, the specific application and local codes. Forane<sup>®</sup> 454B matches the performance of R-410A in similar equipment.

### PROPERTIES

Appearance	Colorless liquefied gas
Odor	Faint, ether-like odor
Molecular Mass (g/mole of blend)	62.6
Flammable Limits (LFL, UFL), vol % (1 atm, 25°C)	11.25 / 22
ANSI/ASHRAE Standard 34 Safety Group Classification	A2L
Ozone Depletion Potential (ODP) (CFC-11 = 1.0)	0
Global Warming Potential (GWP <sup>(1)</sup> ) (CO <sub>2</sub> = 1.0)	465

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

### SPECIFICATIONS

(Meets AHRI 700 - 2019 Specifications)

	Maximum (unless otherwise indicated)
Difluoromethane (HFC-32), wt %	68.9 (67.9-69.9)
Tetrafluoropropene (HFC-1234yf), wt %	31.1 (30.1-32.1)
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

### TEMPERATURE

	50°F	70°F	105°F	115°F	130°F
Vapor Pressure, psia <sup>(2)</sup>	144.0	197.8	327.2	373.8	453.4
Liquid Density, lb./ft <sup>3</sup> <sup>(2)</sup>	65.2	62.5	56.9	55.0	51.8

(2) Generated using NIST REFPROP Version 10.0

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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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